XR-1950/1953

SERVICE MANUAL

E Model
XR-1950

East European Model
XR-1953

Photo : XR-1950

Model Name Using Similar Mechanism	XR-1850/1853
Tape Transport Mechanism Type	MG-36SHJ-32

SPECIFICATIONS

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.13 % (WRMS)
Frequency response	50 – 15,000 Hz
Signal-to-noise ratio	52 dB

Tuner section

FM

Tuning range	FM tuning interval:
XR-1950:	50 kHz/200 kHz switchable 87.5 – 108.0 MHz (at 50 kHz step) 87.5 – 107.9 MHz (at 200 kHz step)
XR-1953:	65 – 74 MHz (at 30 kHz step) 87.5 – 108 MHz (at 50 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	12 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	60 dB (stereo), 65 dB (mono)
Harmonic distortion at 1 kHz	0.5 % (stereo), 0.3 % (mono)
Separation	28 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

AM (XR-1950)

Tuning range	AM tuning interval: 9 kHz/10 kHz switchable 531 – 1,602 kHz (at 9kHz step) 530 – 1,710 kHz (at 10 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	450 kHz
Sensitivity	30 µV

MW/LW (XR-1953)

Tuning range	MW : 531 – 1,602 kHz LW : 153 – 281 kHz
Antenna terminal	External antenna connector
Intermediate frequency	450kHz
Sensitivity	MW : 30 µV LW : 35 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	25 W × 4 (at 4 ohms)

—Continued on next page—

FM/AM CASSETTE CAR STEREO
XR-1950

FM/MW/LW CASSETTE CAR STEREO
XR-1953

SONY®

General

Outputs	Power antenna relay control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 188 × 58 × 173 mm (w/h/d)(with the bracket) not incl. projecting parts and controls
Mounting dimension	Approx. 182 × 53 × 161 mm (w/h/d) not incl. projecting parts and controls
Mass	Approx. 1.3 kg
Supplied accessories	Parts for installation and connections (1 set)

Design and specifications are subject to change without notice.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacture's instructions.

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende
type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens
instruksjoner.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en likvärdig typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt gällande föreskrifter.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

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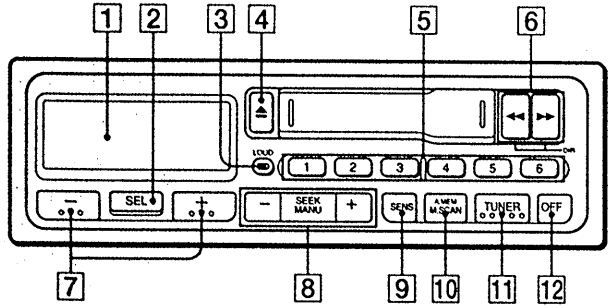
Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Location of controls



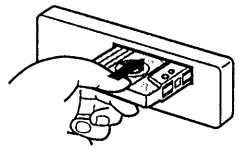
Refer to the pages for further details.

1 **Display window**
2 **SEL (control mode select) button 6**
3 **LOUD (loudness) button 6**
4 **⏏ (eject) button 4**
5 **During radio reception: Preset number buttons 5**
6 **◀◀/▶▶ (fast winding)/DIR (tape transport direction change) buttons 4**
7 **⊕⊖ (volume/bass/treble/balance/fader control) button 6**
8 **SEEK/MANU button 5**
9 **SENS (sensitivity adjust) button 5**
10 **A.MEM (automatic memory)/M.SCAN (Memory scan) 4, 5**
11 **TUNER (radio on/band select) button 4, 5**
12 **OFF button**

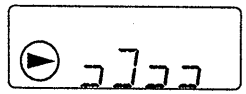
Cassette Player

Listening to the tape

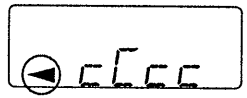
Insert the cassette.



Playback will start automatically.



The side facing up is being played.



The side facing down is being played.

Tip
To change the tape transport direction, press both ◀◀ and ▶▶ at the same time.

To eject the cassette, press ⏏.

Fast-winding the tape

Direction indicator	Fast-forward	Rewind
►	▶▶	◀◀
◄	◀◀	▶▶

To resume playback, press the other fast-winding button partially until the locked button is released.

Tip
◄ and ► flashs while fast-winding the tape.

Radio

Memorizing stations automatically

— Automatic Memory

The unit selects the stations with clearst reception and memorises them. You can store up to 6 stations on each band (FM1, FM2, FM3, MW and LW).

Caution
When tuning in the station while driving, use Automatic Memory to prevent accidents.

1 Press (TUNER) repeatedly to select the desired band (FM1, FM2, FM3, MW and LW).

2 Press (A.MEM/M.SCAN) for two seconds.
The unit stores stations on the number buttons.

Notes
- *The unit will not store stations with weak signals. If there are only a few stations that you can receive, the stations stored before will remain on the other number buttons.*
- *When a preset number is indicated in the display, the unit starts storing stations from the one currently displayed.*

This section is extracted from XR-1953's instruction manual.

Memorizing only the desired stations

You can store up to 6 stations on each band (18 for FM1, FM2 and FM3, 12 for MW and LW) in order of your choice.

1 **Press (TUNER) repeatedly to select the desired band.**

2 **Press either side of (SEEK/MANU) to tune in the station that you want to store on the number button.**

3 **Keep the desired number button (① to ⑥) pressed for two seconds until you hear a beep tones.**

The number button indication appears in the display.

Note

If you try to store another station on the same number button, the previously stored station will be erased.

Receiving the memorized stations

1 **Press (TUNER) repeatedly to select the desired band.**

2 **Press the number button (① to ⑥) momentarily where the desired station is stored.**

Tip

Press (A.MEM/M.SCAN) momentarily to receive in order the stations stored in the memory (Memory scan Function).

If you cannot tune in a preset station

Press either side of (SEEK/MANU) momentarily to search for the station (automatic tuning).
Scanning stops when the unit receives a station. Press either side of (SEEK/MANU) repeatedly until the desired station is received.

Note

If the automatic tuning stops too frequently, press (SENS) momentarily until "LCL" (local seek mode) appears in the display. Only the stations with relatively strong signals will be tuned on.

Tip

If you know the frequency of the station you want to listen to, press and hold either side of (SEEK/MANU) until the desired frequency appears (manual tuning).

If FM stereo reception is poor — Monaural mode

Press (SENS) momentarily until "MONO" appears.
The sound improves, but it will becomes monaural ("STEREO" disappears).

Other Functions

Adjusting the sound characteristics

You can adjust the bass, treble, balance and fader.

1 **Select the item you want to adjust by pressing (SEL) repeatedly.**
To adjust bass or treble, press (SEL) repeatedly until "BAS" or "TRE" flashes.

BAS (bass) → TRE (treble) → BAL (balance) → FAD (fader) → VOL (volume)

2 **Adjust the selected item by pressing ⊕ or ⊖.**

Adjust within three seconds after selecting. (After three seconds the buttons work as volume control buttons.)

Changing the sound and display settings

Enjoying bass and treble even at low volume — Loudness

Bass and treble will be reinforced.

Press (LOUD).
"LOUD" appears.

To cancel, press (LOUD) again.

Turn off the beeps

Press ⑥ while pressing (SEL).
To obtain the beeps again, press these buttons again.

Additional Information

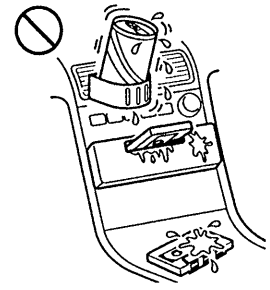
Precautions

- If your car was parked in direct sunlight resulting in a considerable rise in temperature inside the car, allow the unit to cool off before operating it.
- If no power is being supplied to the unit, check the connections first. If everything is in order, check the fuse.
- If no sound comes from the speakers of a 2-speaker system, set the fader control to the center position.
- When the tape is played back for a long period, the cassette shell may become warm because of the built-in power amplifier. However, this is not a sign of a malfunction.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

To maintain high quality sound

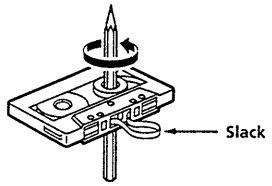
If you have drink holders near your audio equipment, be careful not to splash juice or other soft drinks onto the car audio. Sugary residues on this unit or cassette tapes may contaminate the playback heads, reduce the sound quality, or prevent sound reproduction altogether.
Cassette cleaning kits cannot remove sugar from the tape heads.



Notes on Cassettes

Cassette care

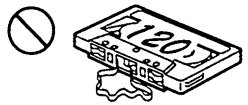
- Do not touch the tape surface of a cassette, as any dirt or dust will contaminate the heads.
- Keep cassettes away from equipment with built-in magnets such as speakers and amplifiers, as erasure or distortion on the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures or moisture.
- Slack in the tape may cause the tape to be caught in the machine. Before you insert the tape, use a pencil or similar object to turn the reel and take up any slack.

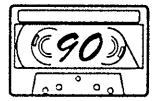


- Distorted cassettes and loose labels can cause problems when inserting or ejecting tapes. Remove or replace loose labels.

Cassettes longer than 90 minutes

The use of cassettes longer than 90 minutes is not recommended except for long continuous play. The tapes used for these cassettes are very thin and tend to be stretched easily. Frequent playing and stopping of these tapes may cause them to be pulled into the cassette deck mechanism.



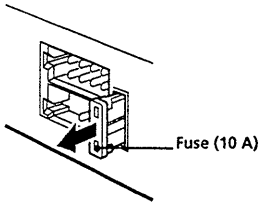


Maintenance

Fuse Replacement

When replacing the fuse, be sure to use one matching the amperage rating stated on the fuse. If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer.

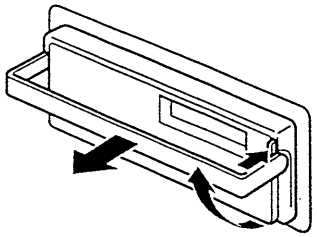
Remove the bracket first, then replace the fuse on the rear of the unit.



Warning

Never use a fuse with an amperage rating exceeding the one supplied with the unit as this could damage the unit.

Dismounting the unit



To prevent the unit from being stolen

When you leave your car, remove the unit from the bracket and take it away with you. Be sure to turn off the power of the unit before removing the unit, otherwise you may hear a noise.

Connections/Podłączenia/Свързване/Csatlakozások/Соединения

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- **Run all ground wires to a common ground point.**

Uwaga

- Sprzęt jest przeznaczony do pracy przy uziemieniu ujemnym 12V DC (prąd stały).
- Przed podłączeniem należy odłączyć uziemienie akumulatora samochodowego, aby zapobiec powstaniu zwarcia.
- **Żółty** i **czerwony** wejściowy przewód zasilający należy połączyć dopiero po podłączeniu wszystkich innych przewodów.
- **Wszystkie przewody uziemiające należy poprowadzić do wspólnego miejsca uziemienia.**

Предупреждение

- Този апарат е предназначен за работа само при 12 V прав ток и заземяване на отрицателната клема
- Преди да направите свързването, откачете заземяващата клема от акумулатора на автомобила, за да избегнете къси съединения
- Свържете жълтия и червения захранващи проводници само след като всички други проводници са свързани
- **Подведете всички заземяващи проводници към обща заземяваща точка.**

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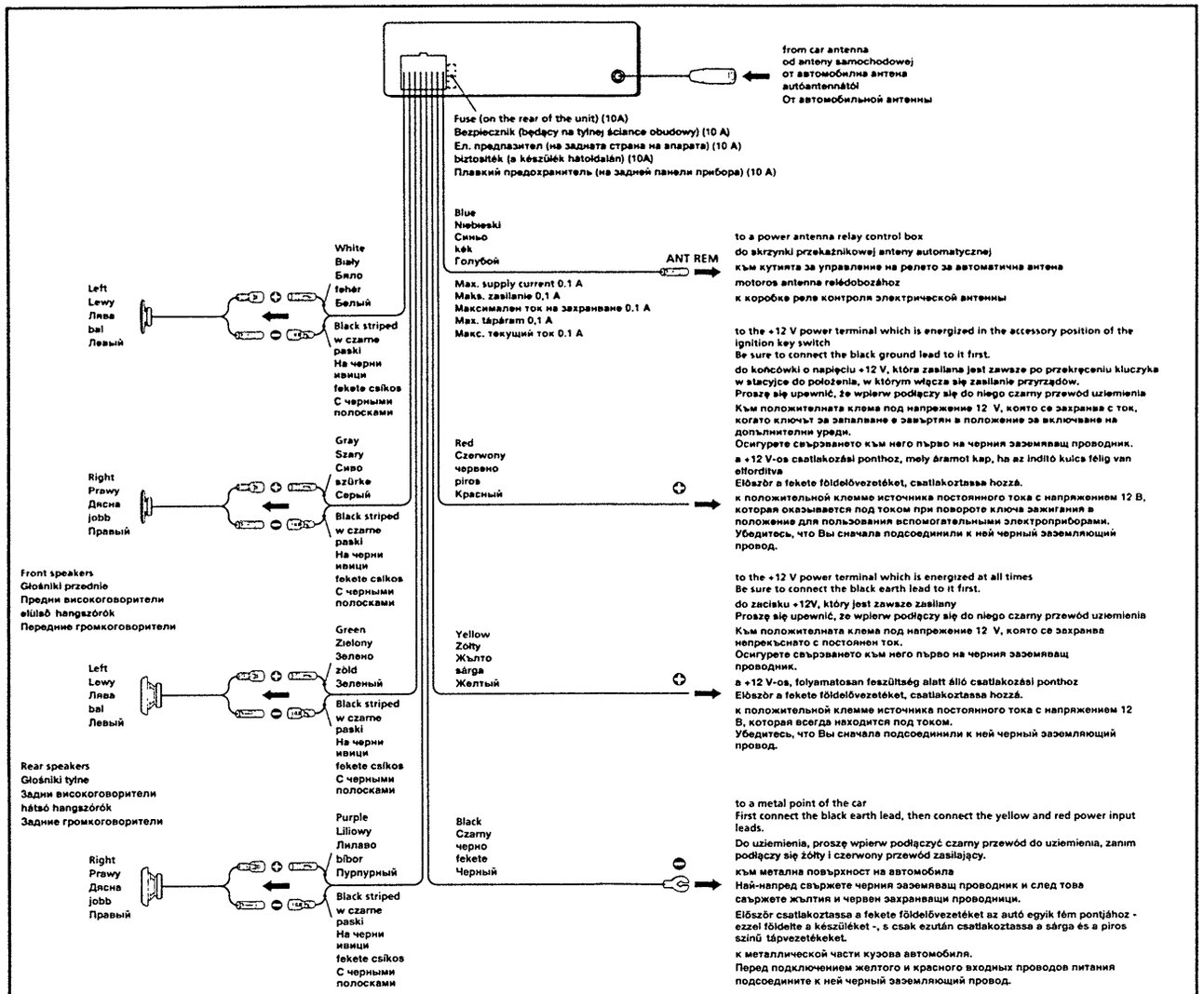
- **Подведете всички заземяващи проводници към обща заземяваща точка.**

Figyelem

- Ez a készülék csak 12 V-os negatív földelésű, egyenáramú akkumulátorról üzemeltethető.
- Egy esetleges rövidzárlat elkerülése érdekében vegye le az autó akkumulátorának csatlakozóját a készülék csatlakoztatása előtt.
- A **sárga** és a **piros** szinű tápvezetéket csak az összes többi vezeték bekötése után csatlakoztassa.
- **Az összes földelővezetéket közös földelőponthoz csatlakoztassa.**

Connections of Example / Przykład podłączenia / Примери за свързване / Csatlakoztatási példák / Соединения в примере


from car antenna
od anteny samochodowej
от автомобилна антена
autóantennától
От автомобильной антенны
Fuse (on the rear of the unit) (10A)
Bezpiecznik (będący na tylnej ściance obudowy) (10 A)
Ел. предпазител (на задната страна на апарата) (10 A)
biztosíték (a készülék hátoldalán) (10A)
Плавкий предохранитель (на задней панели прибора) (10 A)
Blue
Niebieski
Синьо
kék
Голубой
ANT REM
Max. supply current 0.1 A
Maks. zasilanie 0,1 A
Максимален ток на захранване 0.1 A
Max. tápáram 0,1 A
Макс. текущий ток 0.1 A
to a power antenna relay control box
do skrzynki przekaźnikowej anteny automatycznej
към кутията за управление на релето за автоматична антена
motoros antenna relédobozához
к коробке реле контроля электрической антенны
to the +12 V power terminal which is energized in the accessory position of the ignition key switch
Be sure to connect the black ground lead to it first.
do końcówki o napięciu +12 V, która zasilana jest zawsze po przekręceniu kluczyka w stacyjce do położenia, w którym włącza się zasilanie przyrządów.
Proszę się upewnić, że wpierw podłączy się do niego czarny przewód uziemienia
Към положителната клема под напрежение 12 V, която се захранва с ток, когато ключът за запалване е завъртян в положение за включване на допълнителни уреди.
Осигурете свързването към него първо на черния заземяващ проводник.
a +12 V-os csatlakozási ponthoz, mely áramot kap, ha az indító kulcs félig van elfordítva
Először a fekete földelővezetéket, csatlakoztassa hozzá.
к положительной клемме источника постоянного тока с напряжением 12 В, которая оказывается под током при повороте ключа зажигания в положение для пользования вспомогательными электроприборами.
Убедитесь, что Вы сначала подсоединили к ней черный заземляющий провод.
Left
Lewy
Лява
bal
Левый
White
Biały
Бяло
fehér
Белый
Black striped
w czarne paski
На черни ивици
fekete csíkos
С черными полосками
Right
Prawy
Дясна
jobb
Правый
Gray
Szary
Сиво
szürke
Серый
Red
Czerwony
червено
piros
Красный
Front speakers
Głośniki przednie
Предни високоговорители
elülső hangszórók
Передние громкоговорители
Green
Zielony
Зелено
zöld
Зеленый
Yellow
Żółty
Жълто
sárga
Желтый
to the +12 V power terminal which is energized at all times
Be sure to connect the black earth lead to it first.
do zacisku +12V, który jest zawsze zasilany
Proszę się upewnić, że wpierw podłączy się do niego czarny przewód uziemienia
Към положителната клема под напрежение 12 V, която се захранва непрекъснато с постоянен ток.
Осигурете свързването към него първо на черния заземяващ проводник.
a +12 V-os, folyamatosan feszültség alatt álló csatlakozási ponthoz
Először a fekete földelővezetéket, csatlakoztassa hozzá.
к положительной клемме источника постоянного тока с напряжением 12 В, которая всегда находится под током.
Убедитесь, что Вы сначала подсоединили к ней черный заземляющий провод.
Rear speakers
Głośniki tylne
Задни високоговорители
hátsó hangszórók
Задние громкоговорители
Purple
Liliowy
Лилаво
bíbor
Пурпурный
Black
Czarny
черно
fekete
Черный
to a metal point of the car
First connect the black earth lead, then connect the yellow and red power input leads.
Do uziemienia, proszę wpierw podłączyć czarny przewód do uziemienia, zanim podłączy się żółty i czerwony przewód zasilający.
към метална повърхност на автомобила
Най-напред свържете черния заземяващ проводник и след това свържете жълтия и червен захранващи проводници.
Először csatlakoztassa a fekete földelővezetéket az autó egyik fém pontjához - ezzel földelte a készüléket -, s csak ezután csatlakoztassa a sárga és a piros szinű tápvezetéket.
к металлической части кузова автомобиля.
Перед подключением желтого и красного входных проводов питания подсоедините к ней черный заземляющий провод.

Notes on the control leads

- *The ANT REM lead (blue) supplies +12 V DC when you turn on the unit. When the ANT REM lead is connected to the power antenna, the antenna will be extended as long as the unit is turned on*
- *A power antenna without relay box cannot be used with this unit*

Memory hold connection

When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off

Notes on speaker connection

- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

Uwagi na temat przewodów zasilania

- *Przewod ANT REM (niebieski) służy do zasilania sprzętu prądem stałym o napięciu + 12 V, po włączeniu radia. Jeżeli przewód ANT REM jest podłączony do automatycznej anteny, to antena będzie wysunięta tak długo, jak długo sprzęt będzie włączony.*
- *Do niniejszego urządzenia nie można używać anteny automatycznej bez skrzynki przekaźnikowej.*

Zasilanie pamięci

Jeżeli podłączyło się żółty wejściowy przewód zasilający, obwód pamięci będzie zawsze zasilany nawet po wyłączeniu stacyjki.

Uwagi odnośnie podłączania głośników

- *Przed podłączeniem głośników należy wyłączyć radio.*
- *Proszę stosować głośniki o impedancji 4 do 8 omów i o odpowiedniej obciążalności mocowej, gdyż w innym przypadku może dojść do ich uszkodzenia.*
- *Nie należy podłączać przewodów układu głośników do podwozia samochodu, a przyłączy głośnika prawego nie łączyć z przyłączami głośnika lewego.*
- *Nie należy podłączać głośników równolegle.*
- *Nie podłączać do urządzenia głośników aktywnych (z wbudowanymi wzmacniaczami), może to bowiem doprowadzić do ich uszkodzenia. Proszę podłączać wyłącznie głośniki pasywne.*

Забележки по проводниците за управление

- *Проводникът (син) ANT REM подава + 12 V прав ток, когато включите апарата. В случай, че проводникът ANT REM е свързан към автоматичната антена, антената ще бъде изтеглена докато апарата е включен*
- *Автоматична антена без релейна кутия не може да бъде използувана с този апарат.*

Свързване за поддържане на паметта

Когато е свързан жълтият захранващ проводник, към интегралната схема на паметта ще се подава винаги ток, дори когато ключът за запалването е в положение изключено.

Забележки по свързването на високоговорителите

- *Преди свързване на високоговорителите, изключете апарата*
- *Използувайте високоговорители със съпротивление от 4 до 8 ома и със съответствуваща мощност за поддържане на захранването. В противен случай, високоговорителите могат да се повредят.*
- *Не свързвайте изводите за високоговорителите с шасито на автомобила, както и не свързвайте извода за десния високоговорител с този на левия високоговорител.*
- *Не се опитвайте да свързвате високоговорителите успоредно.*
- *Не свързвайте в никакъв случай активни високоговорители (с вградени усилватели) към изводите за високоговорителите на апарата. В противен случай ще повредите активните високоговорители. Ето защо е необходимо да се уверите, че свързвате пасивни високоговорители към тези изводи.*

Tudnivalók a vezérlővezetékekről

- *Az ANT REM vezeték (kék) 12 V egyenfeszültséget kap, ha bekapcsolja a készüléket. Ha az ANT REM vezeteket motoros antennahoz csatlakoztatja, az antenna kiegyenesedik a készülék bekapcsolására.*
- *Ha a készülékhez motoros antennát csatlakoztat, úgy kizárólag reledobozzal felszerelt motoros antennat használjon.*

Memóriafenntartás

Ha csatlakoztatja a sarga tapvezetéket, úgy folyamatosan feszültség alatt marad a memóna áramkör, meg akkor is, ha kikapcsolja a gyujtást.

Tudnivalók a hangszórók csatlakoztatásáról

- *Kérjük kapcsolja ki a készüléket a hangszórók csatlakoztatása előtt.*
- *4-8 ohm impedanciáju, megfelelő teljesítményű hangszórókat használjon, ellenkező esetben ugyanis előfordulhat, hogy a hangszorók károsodnak.*
- *Ne csatlakoztassa a hangszórokat az autó fém szerkezetéhez és ne csatlakoztassa a jobb hangszórót a bal hangszóróhoz.*
- *A hangszórókat semmi esetre se csatlakoztassa párhuzamosan.*
- *Ne csatlakoztasson aktiv (beepitett erősitővel felszerelt) hangszórókat a készülékhez, ellenkező esetben ugyanis karosodhatnak az aktiv hangszórók. A készülékhez csak passziv hangszórókat szabad csatlakoztatni.*

Примечания по управляющим проводам

- *Провод ANT REM (голубой) подает постоянный ток +12 В, когда Вы включаете прибор. Если провод ANT REM подключен к электрической антенне, она будет принимать, пока прибор включен.*
- *Электрическая антенна без коробки реле не может быть использована с данным прибором.*

Соединение поддержки памяти

Если желтый сетевой провод подключен, питание будет подаваться для поддержки памяти всегда, даже при выключенном зажигании.

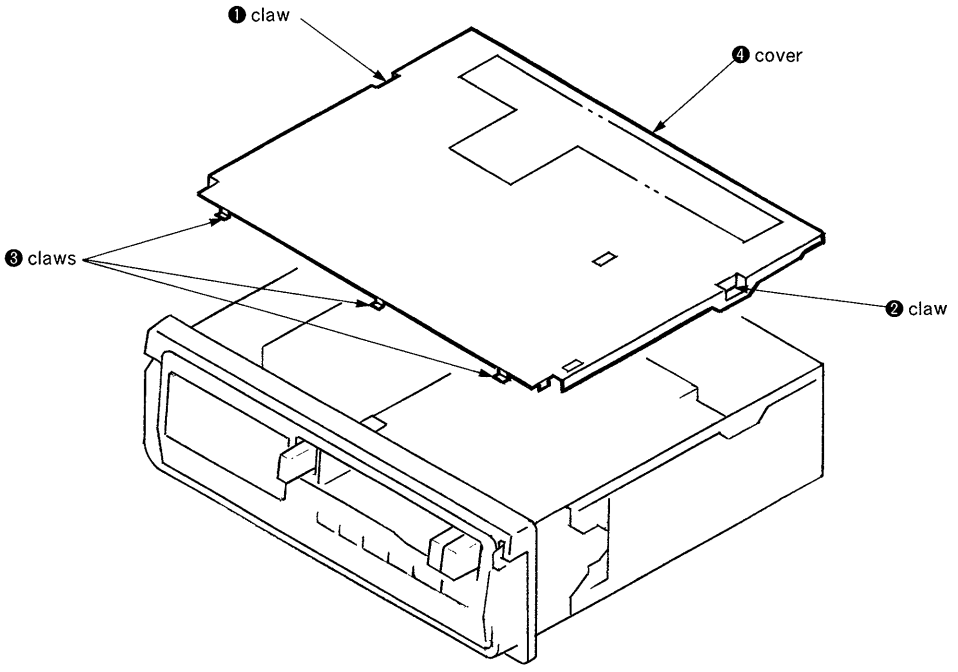
Примечания по подключению громкоговорителей

- *Перед подключением громкоговорителей выключите прибор.*
- *Используйте громкоговорители с сопротивлением от 4 до 8 Ом и с адекватной мощностью. Иначе громкоговорители могут быть повреждены.*
- *Не подсоединяйте клеммы громкоговорителей на массу и не соединяйте клеммы правых громкоговорителей с клеммами левых.*
- *Не пытайтесь подключить громкоговорители параллельно.*
- *Не подключайте активные громкоговорители (со встроенным усилителем) к клеммам громкоговорителей на приборе. Это может повредить активные громкоговорители. Поэтому убедитесь, что подключаете пассивные громкоговорители к данным клеммам.*

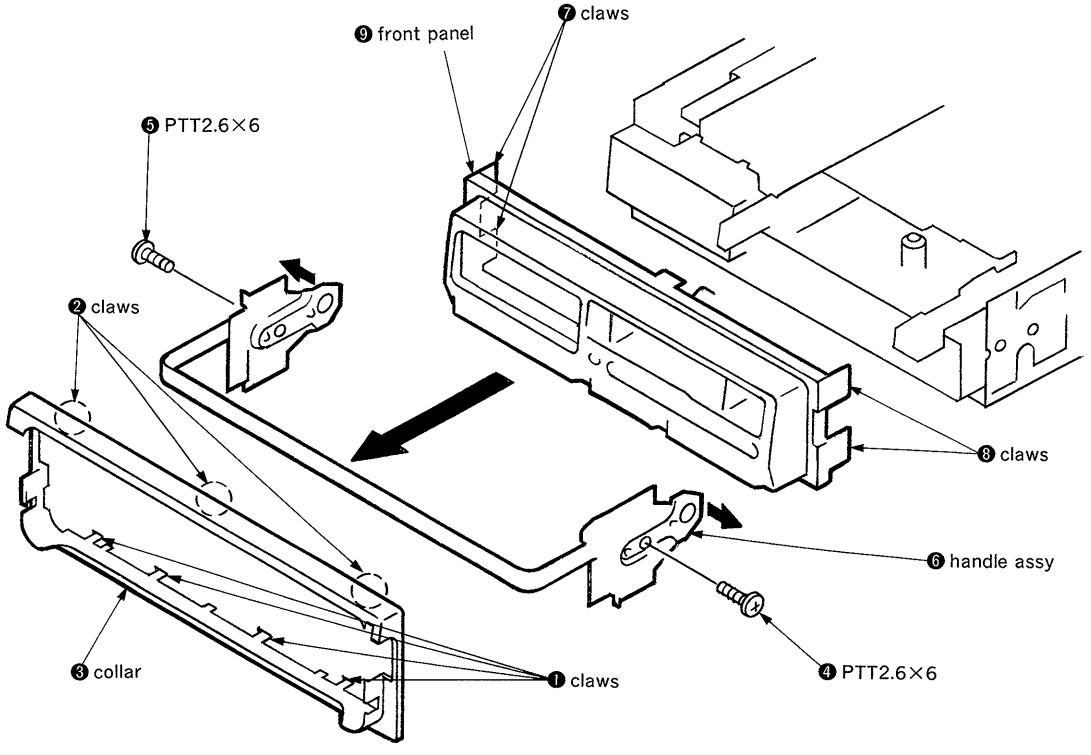
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

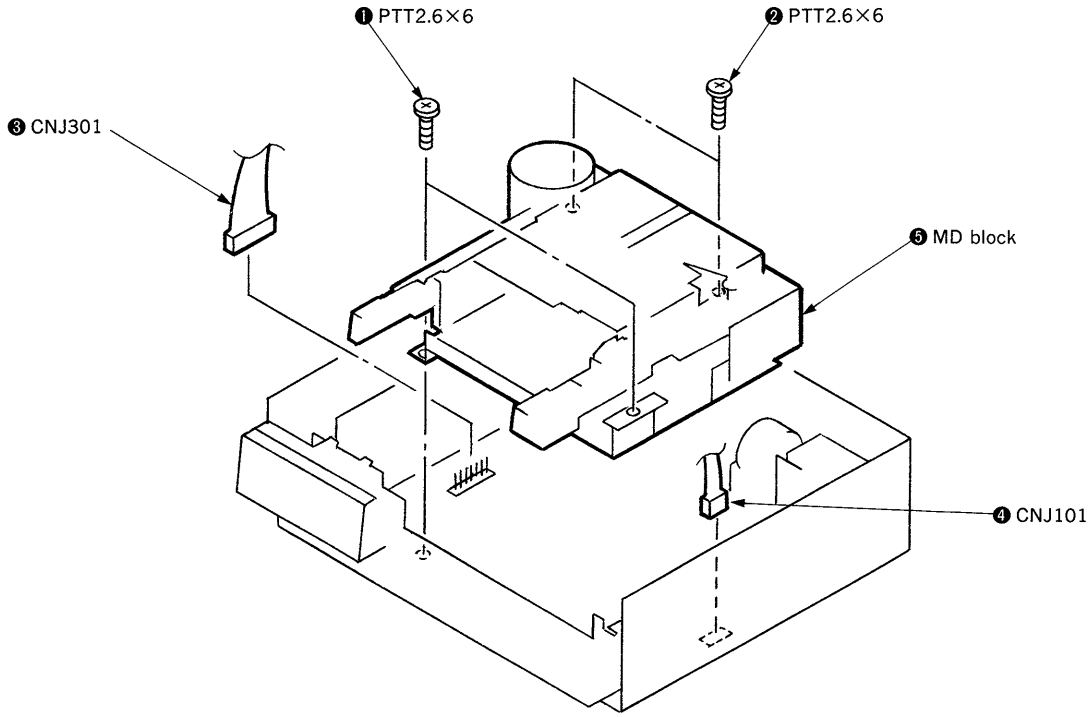
2-1. COVER



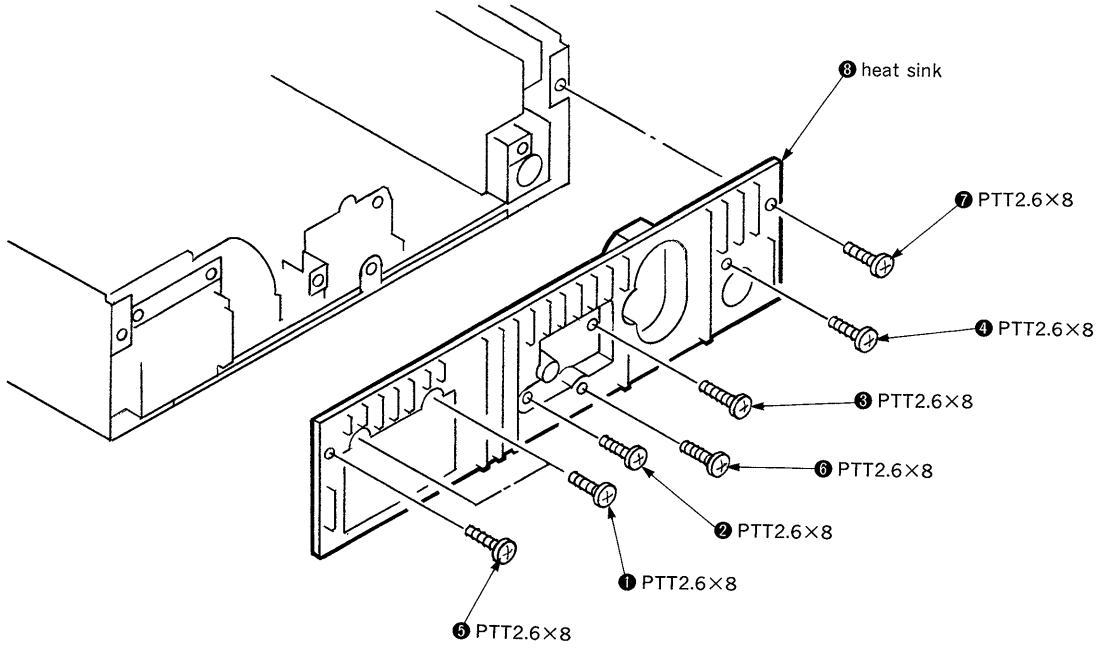
2-2. FRONT PANEL



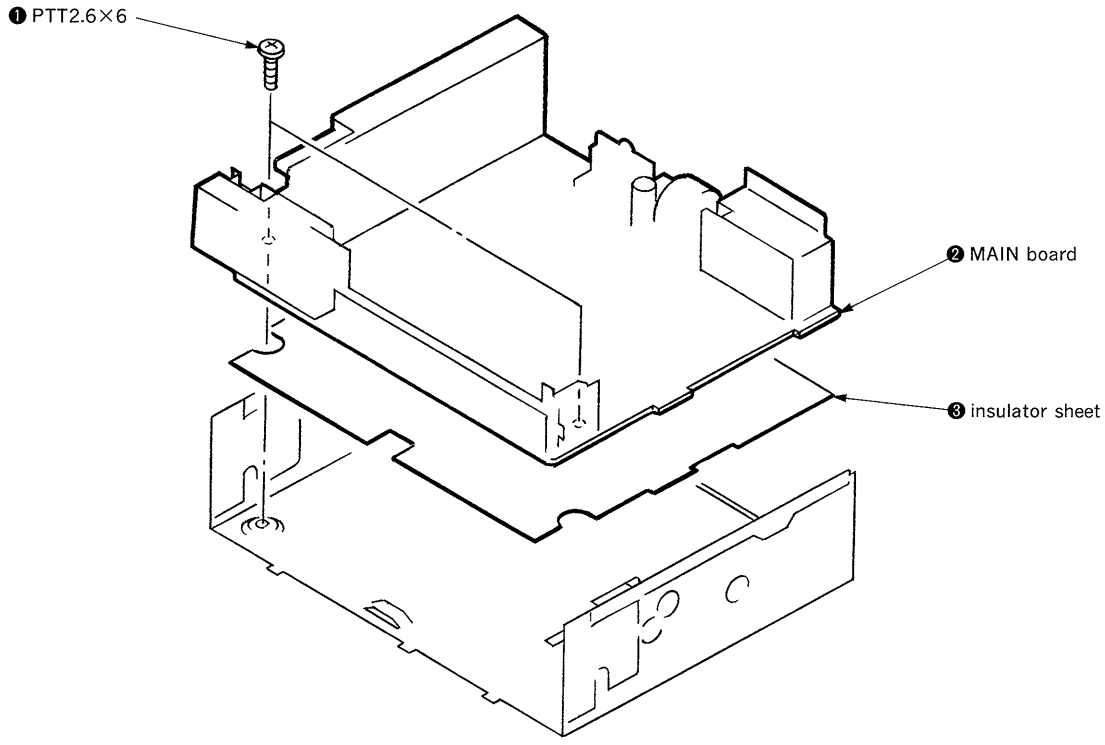
2-3. MD BLOCK



2-4. HEAT SINK



2-5. MAIN BOARD



SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment:
   PB head　　Pinch roller
   Idler　　Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V).

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	40—75g•cm (0.56—1.04oz•inch)
FWD Back Tension		1—5g•cm (0.01—0.06oz•inch)
REV	CQ-102RC	40—75g•cm (0.56—1.04oz•inch)
REV Back Tension		1—5g•cm (0.01—0.06oz•inch)
FF, REW	CQ-201B	45—150g•cm (0.63—2.08oz•inch)

SECTION 4
ELECTRICAL ADJUSTMENTS

DECK SECTION **0dB=0.775V**

1. The adjustments should be performed in the order given in this service manual.
2. The adjustments should be performed for both L-CH and R-CH.

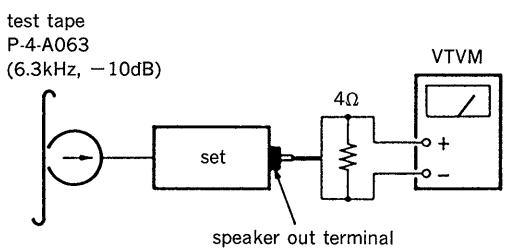
Test Tape

Type	Signal	Used for
P-4-A063	6.3kHz, −10dB	head azimuth adjustment
WS-48A	3kHz, 0dB	tape speed adjustment

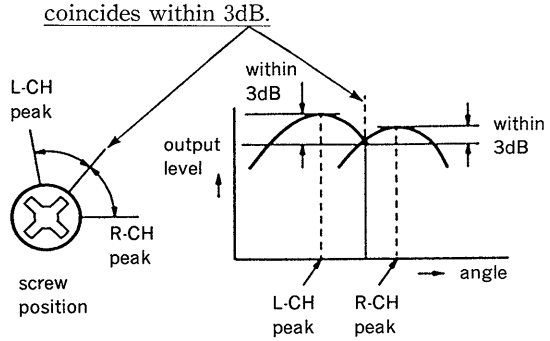
PB Head Azimuth Adjustment

Procedure:

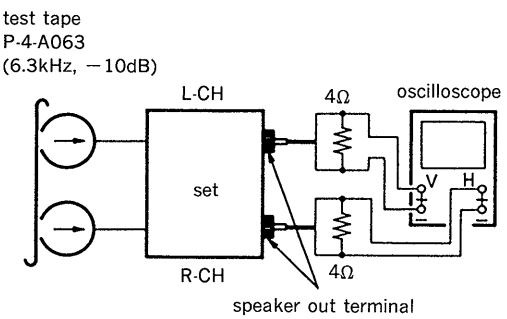
1. Mode: playback

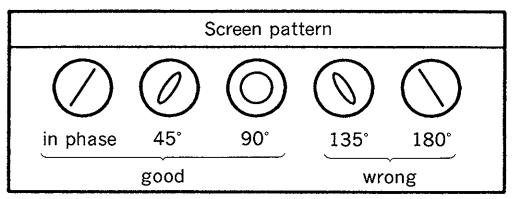


2. Turn the screw and check the output peak value. Adjust the screw so that the peak value in channels L and R coincides within 3dB.



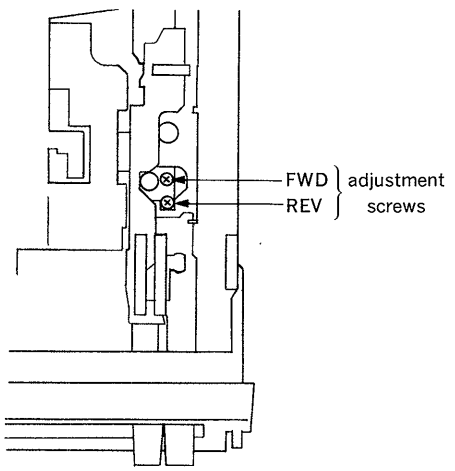
3. Check the phase in the PB mode.





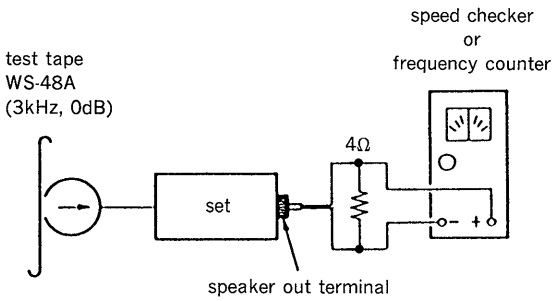
4. Repeat the above adjustment for the PB REV mode.

Adjustment Location:



Tape Speed Adjustment

Setting :



Procedure :

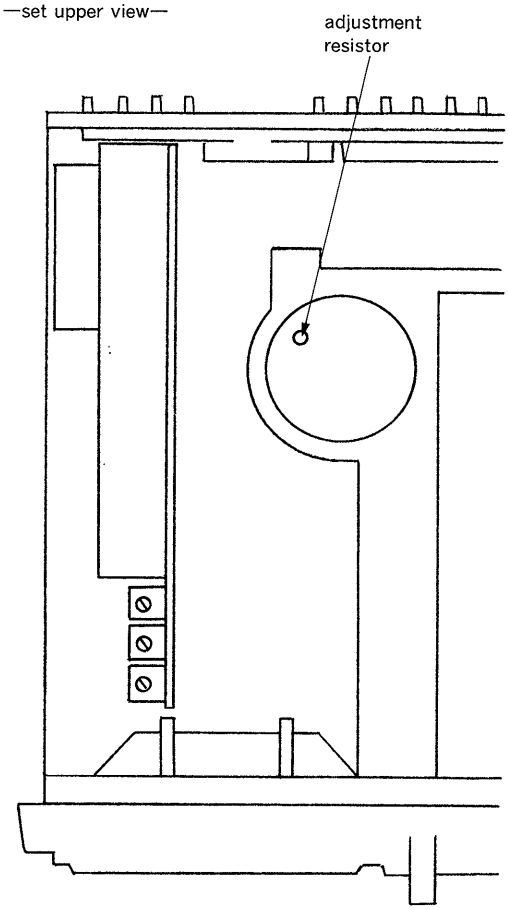
1. Put the set into the FWD PB mode.
2. Adjust adjustment resistor for inside capstan motor so that the reading on the speed checker or frequency counter becomes in specification.

Specification : Constant speed

Speed checker	Frequency counter
−2.0 to +3.0%	2,940 to 3,090Hz

Adjustment Location :

—set upper view—



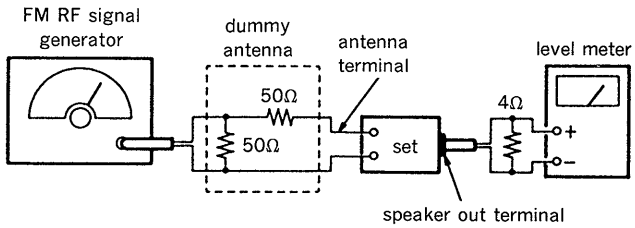
TUNER SECTION | 0dB=1μV

Cautions during repair
When the FM tuner is defective, replace it by a new one because its internal block is difficult to repair.

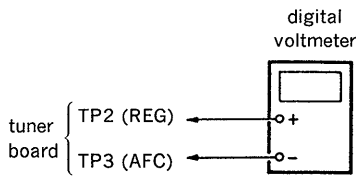
FM OV Adjustment

Setting :

TUNER button : FM
FREQUENCY SELECT switch (XR-1950) : FM50k



Carrier frequency : 98.0MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 1kHz, 75kHz deviation (100%)



Procedure :

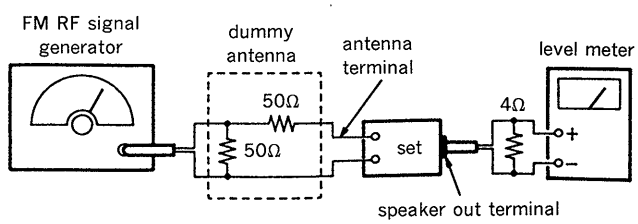
1. Tune the set to 98.0MHz.
2. Adjust T56 so that the reading on the digital voltmeter becomes 0±0.02V.

Adjustment Location : See page 15.

FM High Cut Control Adjustment

Setting :

TUNER button : FM
FREQUENCY SELECT switch (XR-1950) : FM50k



Carrier frequency : 98.0MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 10kHz, 75kHz deviation (100%)

Procedure :

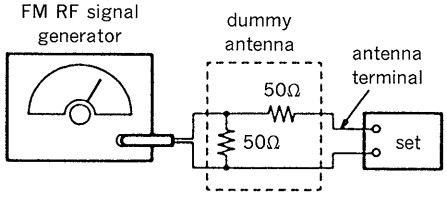
1. Tune the set to 98.0MHz.
2. The then output level is supposing that (A) dB.
3. Adjust RV53 so that the output level is (A)−4±1dB then signal generator input set to 20dB.

Adjustment Location : See page 15.

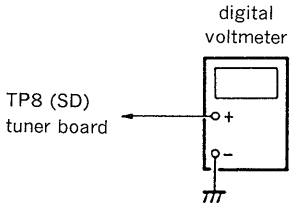
FM SEEK Stop Adjustment

Setting :

TUNER button : FM
FREQUENCY SELECT switch (XR-1950) : FM50k



Carrier frequency : 98.0MHz
Output level : 22dB (12.6μV)
Mode : mono
Modulation : 1kHz, 22.5kHz deviation (30%)



Procedure :

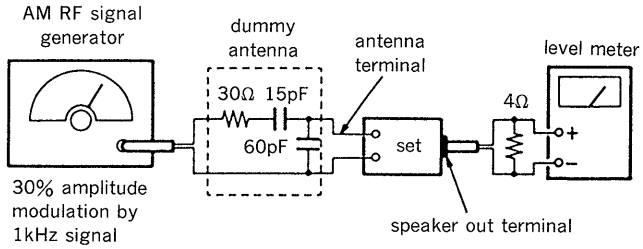
1. Short the jumper wire between TP9 and VCC (+5V). (See page 15.)
2. Adjust RV51 so that the reading on the digital voltmeter becomes 3Vdc.
3. After adjustment is completed remove the jumper wire.

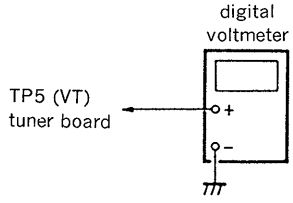
Adjustment Location : See page 15.

AM (MW) VT Adjustment

Setting :

TUNER button : AM (XR-1950)
: MW (XR-1953)
FREQUENCY SELECT switch (XR-1950) : AM9k





Procedure :

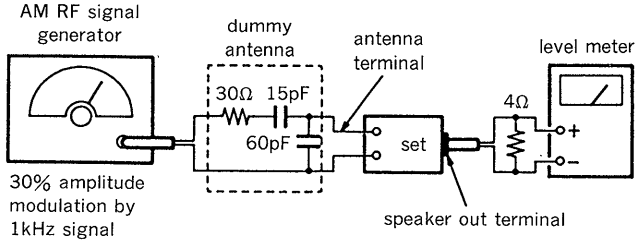
1. Tune the set to 531kHz.
2. Adjust L54 so that the reading on the digital voltmeter becomes 1.5±0.03V.
3. Tune the set to 1,710kHz (XR-1950) or 1,602kHz (XR-1953).
4. Adjust CT53 so that the reading on the digital voltmeter becomes 7.8±0.1V (XR-1950) or 7.2±0.1V (XR-1953).

Adjustment Location : See page 15.

AM (MW) IF Adjustment

Setting :

TUNER button : AM (XR-1950)
: MW (XR-1953)
FREQUENCY SELECT switch (XR-1950) : AM9k



Procedure :

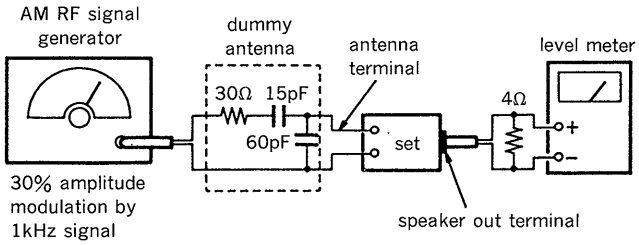
1. Tune the set to 999kHz.
2. Adjust T55 so that the reading on the level meter becomes to maximum.

Adjustment Location : See page 15.

AM (MW) Tracking Adjustment

Setting :

TUNER button : AM (XR-1950)
: MW (XR-1953)
FREQUENCY SELECT switch (XR-1950) : AM9k



Procedure :

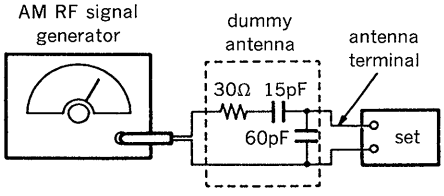
1. Tune the set to 603kHz.
2. Adjust T51 and T53 so that the reading on the level meter becomes to maximum.
3. Tune the set to 1,512kHz.
4. Adjust CT51 and CT52 so that the reading on the level meter becomes to maximum.

Adjustment Location : See page 15.

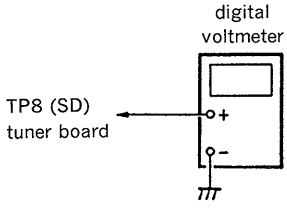
AM (MW) SEEK Stop Adjustment

Setting :

TUNER button : AM (XR-1950)
: MW (XR-1953)
FREQUENCY SELECT switch (XR-1950) : AM9k



Carrier frequency : 999kHz
Output level : 33dB (44.7μV)
Modulation : no modulation



Procedure :

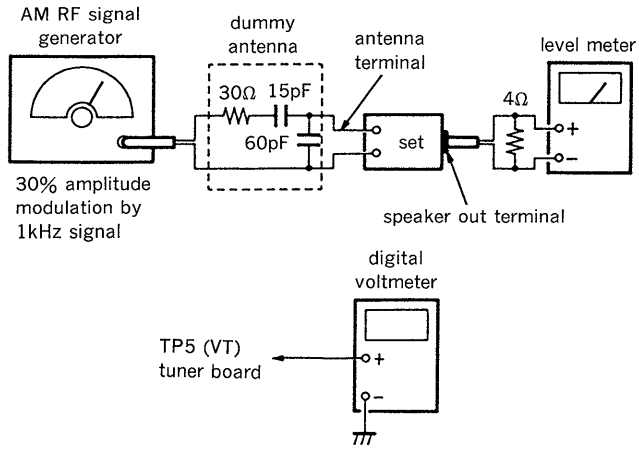
1. Short the jumper wire between TP9 and VCC (+5V). (See page 15.)
2. Adjust RV52 so that the reading on the digital voltmeter becomes 3Vdc.
3. After adjustment is completed remove the short wire.

Adjustment Location : See page 15.

LW VT Adjustment (XR-1953)

Setting :

TUNER button : LW



Procedure :

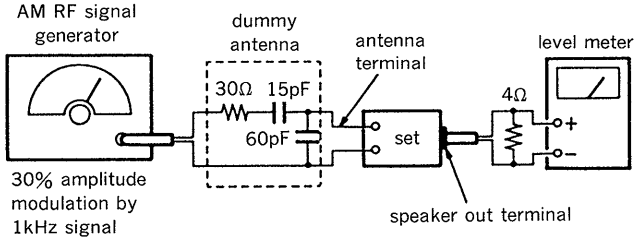
1. Tune the set to 153kHz.
2. Adjust L53 so that the reading on the digital voltmeter becomes 3.1±0.05V.
3. Tune the set to 279kHz.
4. Confirm that the reading on the digital voltmeter becomes 7.0±0.3V.

Adjustment Location : See page 15.

LW Tracking Adjustment (XR-1953)

Setting :

TUNER button : LW



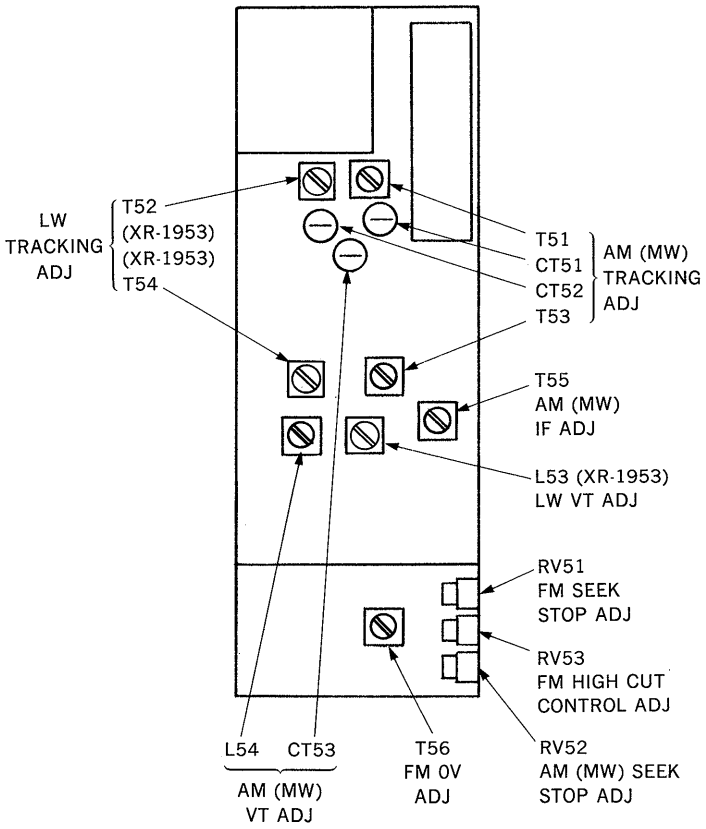
Procedure :

1. Tune the set to 153kHz.
2. Adjust T52 and T54 so that the reading on the level meter becomes to maximum.

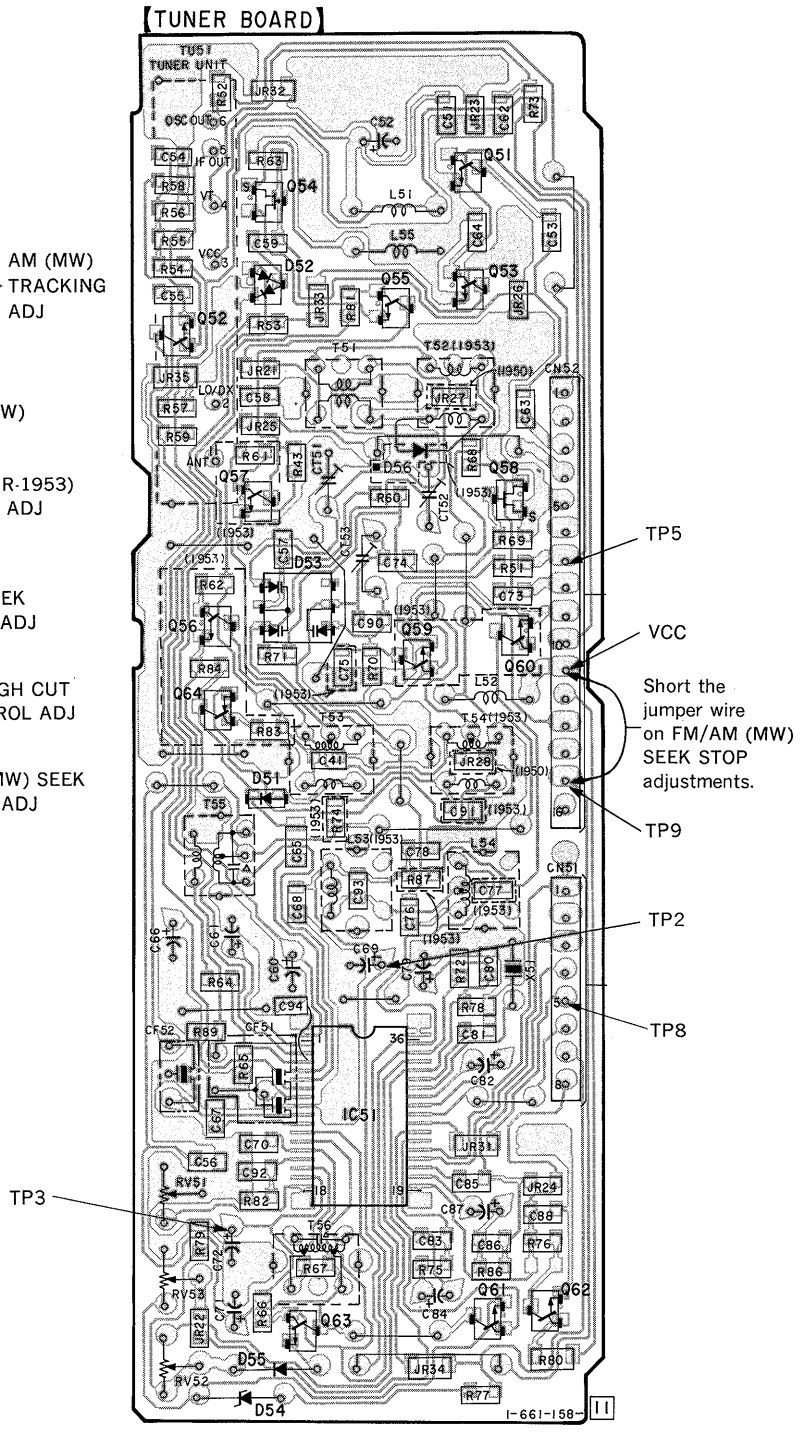
Adjustment Location : See page 15.

Adjustment Location : tuner board

—tuner board (component side)—



—tuner board (conductor side)—



SECTION 5
DIAGRAMS

5-1. PRINTED WIRING BOARDS

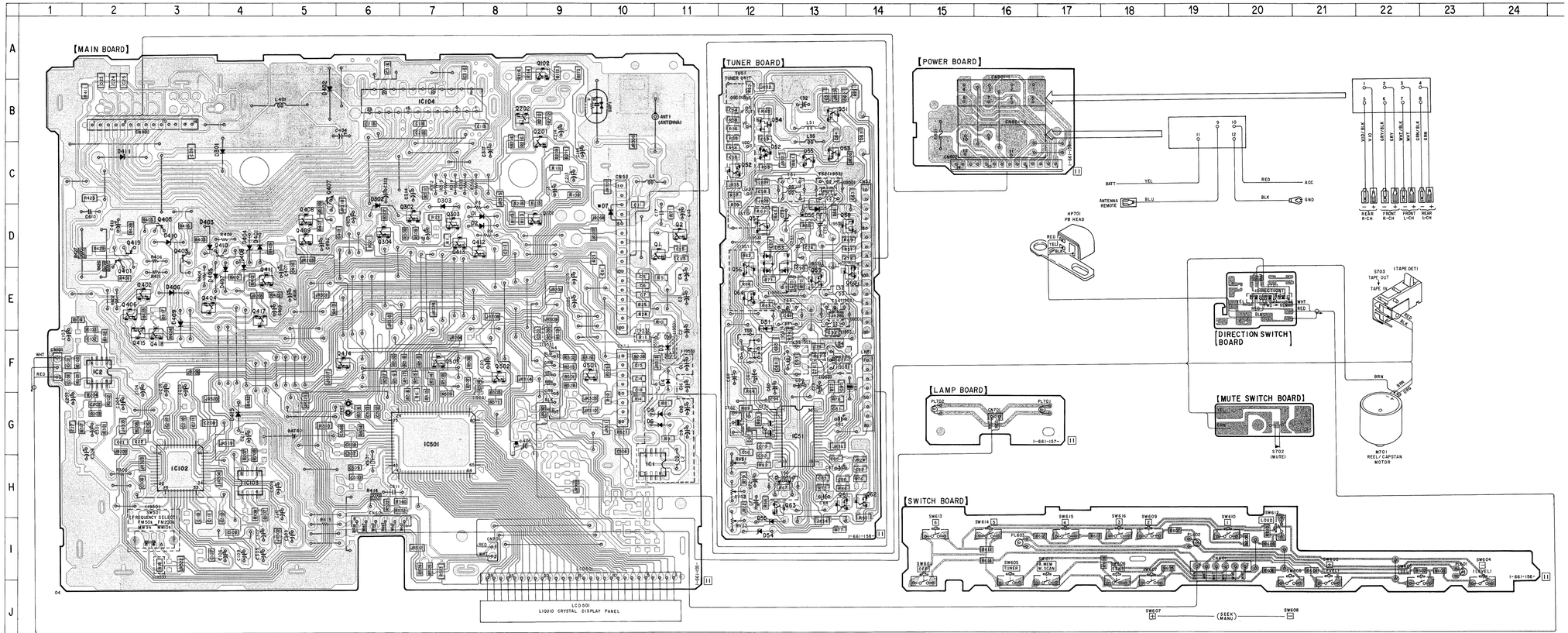
● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D1	D-8	Q53	C-13
D2	D-8	Q54	B-12
(D3)	F-11	Q55	C-13
(D4)	F-11	(Q56)	D-12
(D5)	G-11	(Q57)	D-12
(D6)	G-11	Q58	D-13
D7	D-10	(Q59)	E-13
(D51)	E-12	(Q60)	E-14
D52	C-12	Q61	H-13
D53	D-12	Q62	H-14
D54	I-12	Q63	H-12
D55	I-12	(Q64)	E-12
(D56)	D-13	Q101	D-9
D301	C-4	Q102	A-9
D302	D-6	Q201	B-9
D303	D-7	Q202	B-8
D401	D-4	Q302	D-7
D402	B-5	Q303	D-7
D403	D-4	Q304	D-6
D404	D-4	Q401	D-2
D405	E-4	Q402	E-2
D406	E-3	Q403	D-3
D407	E-4	Q404	E-4
D408	D-4	Q405	D-3
D409	E-3	Q406	E-2
D410	D-3	Q407	C-5
D411	C-2	Q408	D-5
D415	G-4	Q409	D-5
		Q410	D-4
(IC1)	H-10	Q411	E-4
IC2	F-2	Q412	D-8
IC51	G-13	Q413	D-7
IC102	H-3	Q414	F-6
IC103	H-4	Q415	F-2
IC104	B-7	Q417	E-4
IC501	G-7	Q418	F-3
		Q419	D-2
Q1	D-11	Q501	F-9
Q2	D-11	(Q502)	F-8
Q51	B-13	Q503	F-7
Q52	C-12		

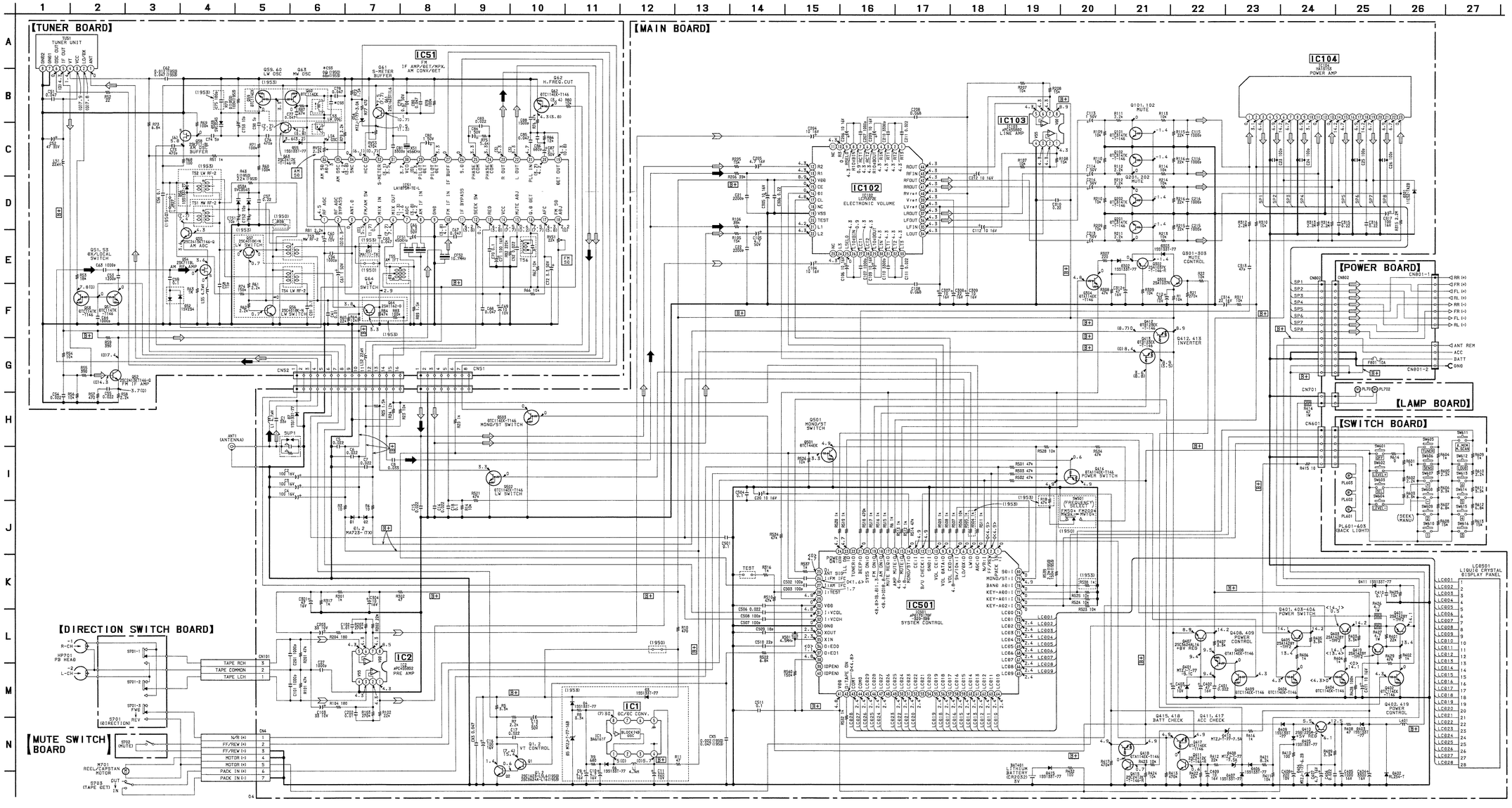
( ): XR-1953 only

Note :

- ○— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen. (The other layer's patterns are not indicated.)



5-2. SCHEMATIC DIAGRAM • Refer to page 25 for IC Block Diagrams.

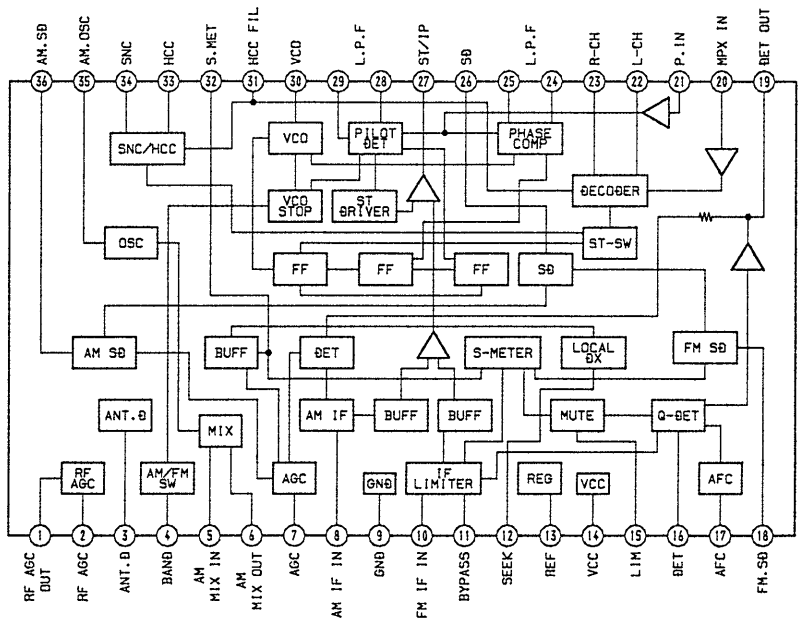


Note :

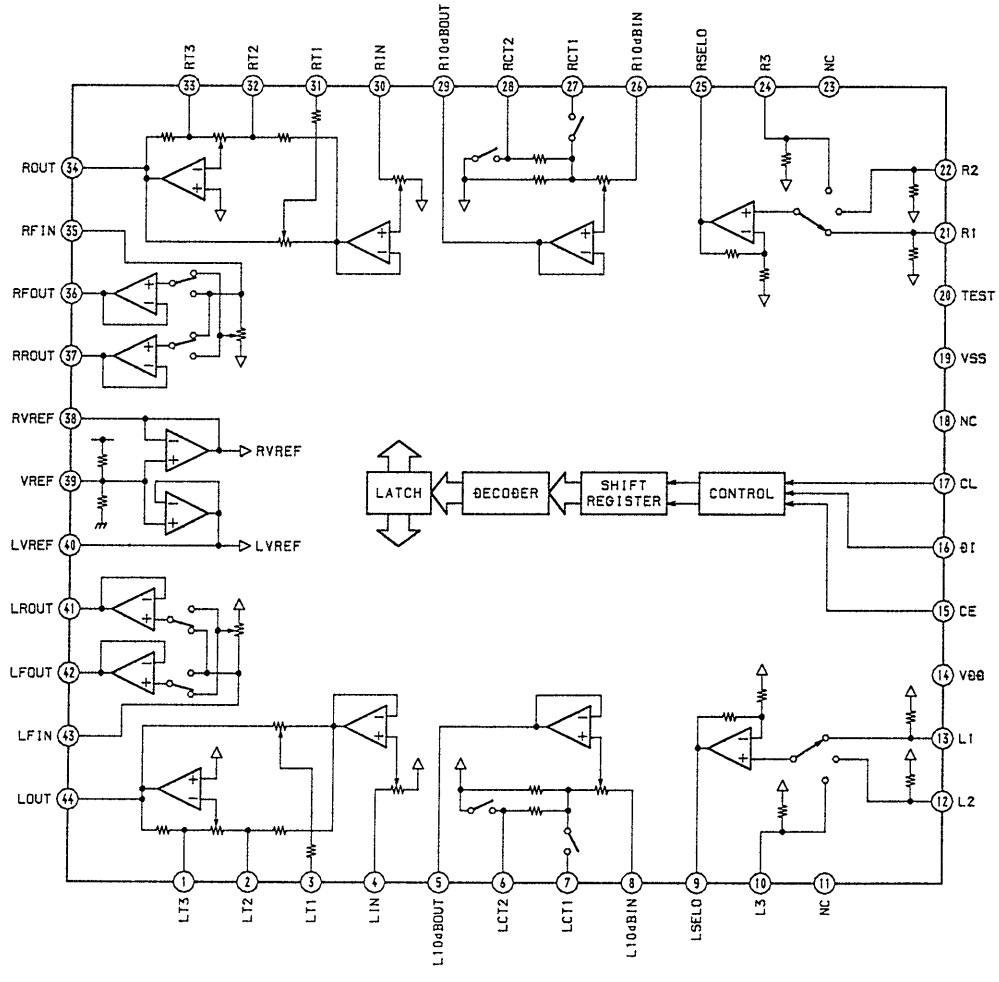
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ⚠ : nonflammable resistor.
- B+ : B+ Line
- ▭ : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
- no mark: FM
  ( ): AM (MW)
  < >: PB
  ✱ : Impossible measurement point
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ➡ : AM (MW)
  ⇨ : PB

• **IC Block Diagrams**

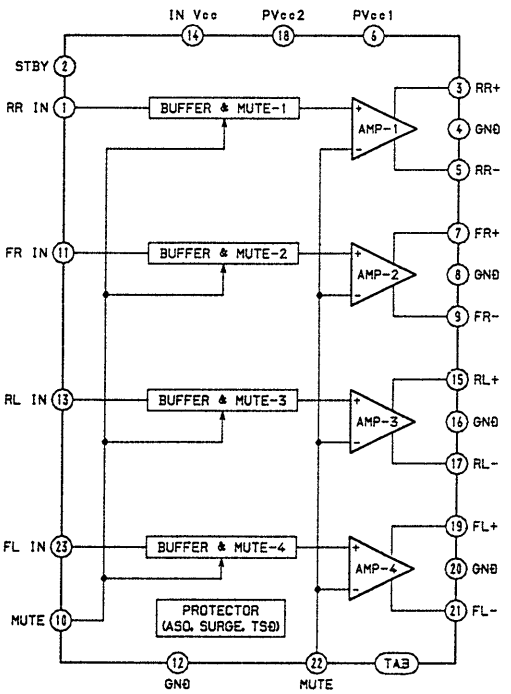
IC51 LA1875M-TE-L



IC102 LC75372E



IC104 HA13153

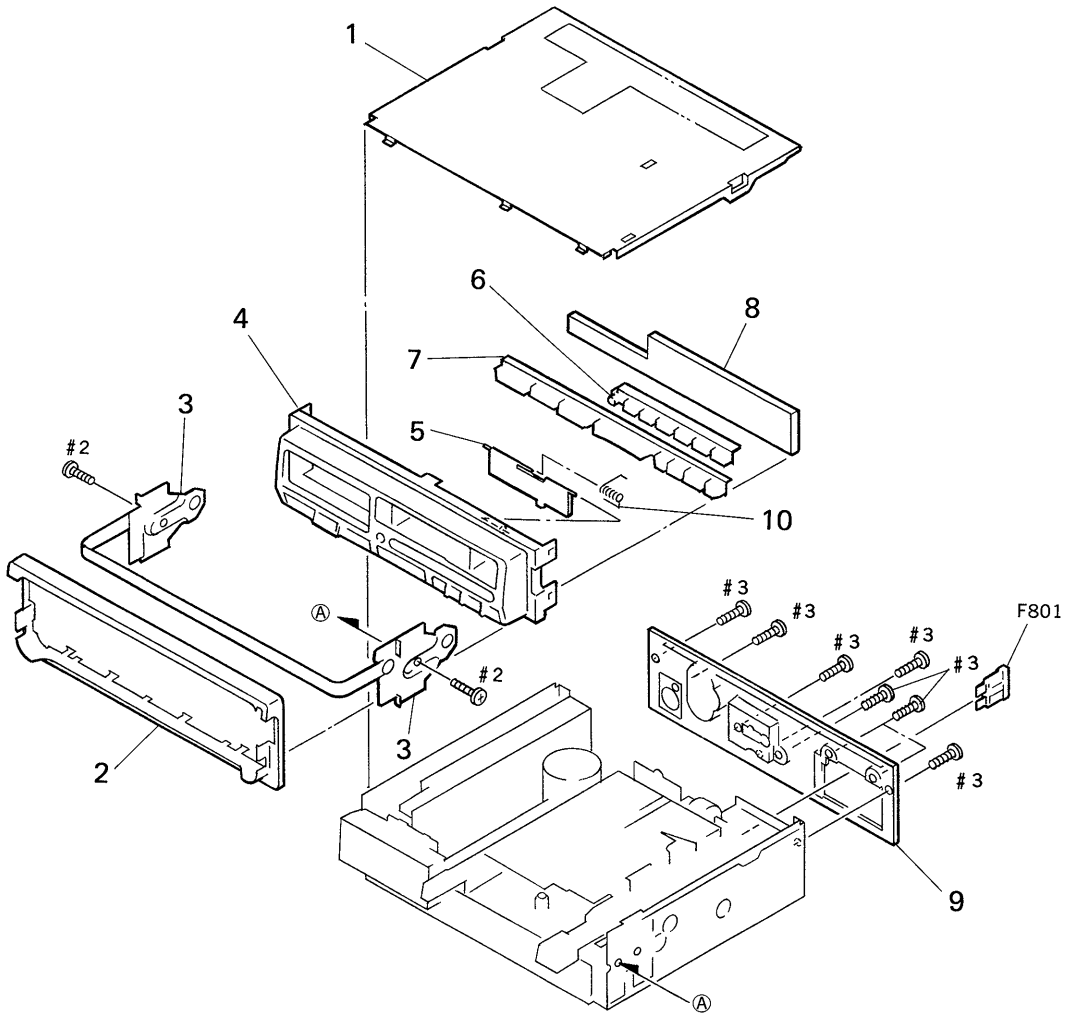


SECTION 6
EXPLODED VIEWS

NOTE:

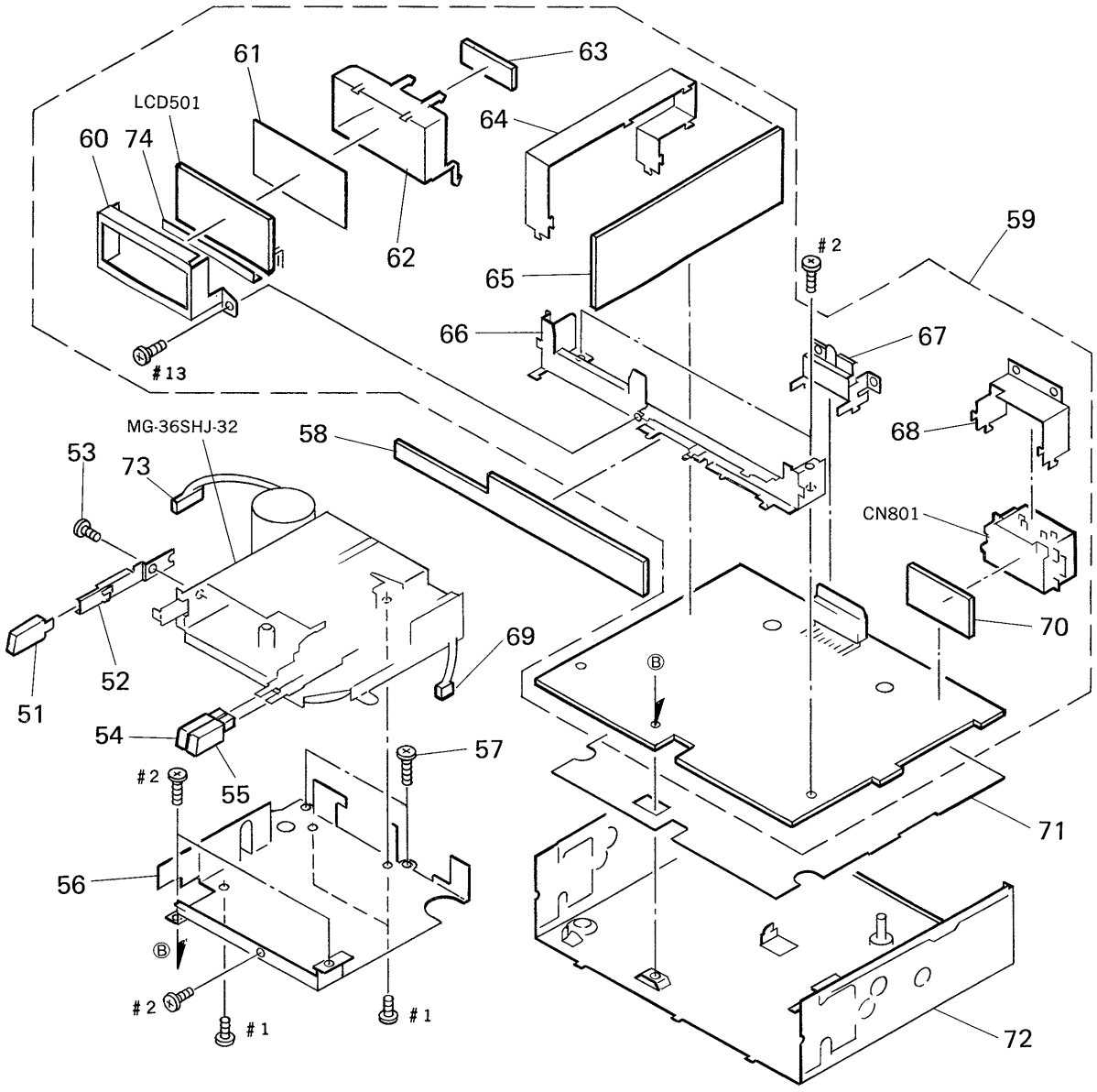
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

6-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
* 1	3-935-559-01	COVER	
2	3-935-578-01	COLLAR	
3	X-3372-126-1	HANDLE ASSY	
4	3-935-577-01	PANEL, FRONT (1950)	
4	3-935-577-21	PANEL, FRONT (1953)	
5	3-935-583-01	DOOR, CASSETTE (1950)	
5	3-935-583-11	DOOR, CASSETTE (1953)	
6	3-935-587-01	BUTTON (1-6)	
7	3-935-588-01	BUTTON (S/MANU)	
8	3-935-591-01	PLATE (BUTTON), LIGHT GUIDE	
9	3-935-582-01	SINK, HEAT	
10	3-935-593-01	SPRING (C DOOR)	
F801	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	

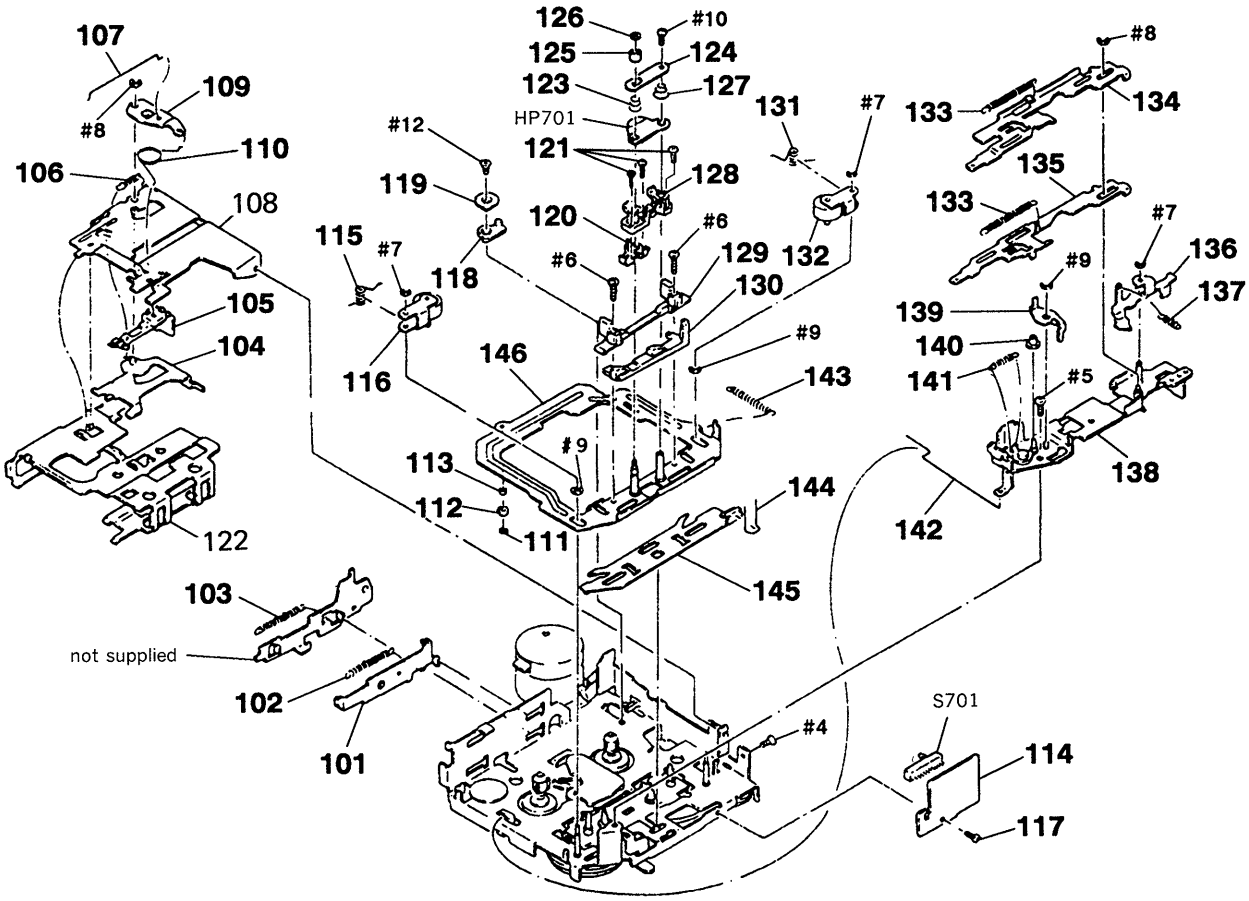
6-2. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
51	3-935-584-01	BUTTON (EJECT)	
* 52	3-935-569-01	LEVER (EJECT)	
53	3-372-033-11	SCREW (2.6X3), +P	
54	3-935-586-01	BUTTON (REW)	
55	3-935-585-01	BUTTON (FF)	
56	3-935-560-01	BRACKET (MD)	
57	3-919-171-01	SCREW (2.6X6) (C TIGHT)	
* 58	A-3309-294-A	SWITCH BOARD, COMPLETE (1950(GREEN))	
* 58	A-3309-297-A	SWITCH BOARD, COMPLETE (1950(AMBER)/1953)	
* 59	A-3309-288-A	MAIN BOARD, COMPLETE (1953)	
* 59	A-3309-290-A	MAIN BOARD, COMPLETE (1950(GREEN))	
* 59	A-3309-295-A	MAIN BOARD, COMPLETE (1950(AMBER))	
* 60	3-935-574-01	PLATE (LCD), GROUND	
* 61	3-935-581-01	SHEET (REFLECTOR)	

Ref. No.	Part No.	Description	Remark
* 62	3-935-580-01	HOLDER (LCD)	
* 63	1-661-157-11	LAMP BOARD	
* 64	3-935-572-01	BRACKET (RF)	
* 65	1-661-158-11	TUNER BOARD	
* 66	3-935-557-01	CHASSIS (FRONT)	
* 67	3-935-558-01	BRACKET (IC)	
* 68	3-935-571-01	BRACKET (CONNECTOR)	
69	1-769-261-11	CORD (WITH CONNECTOR) 3P	
* 70	1-661-159-11	POWER BOARD	
* 71	3-935-589-01	SHEET, INSULATOR	
* 72	X-3372-129-1	CHASSIS (MAIN) ASSY	
73	1-769-262-11	CORD (WITH CONNECTOR) 7P	
* 74	3-938-989-01	SHEET (LCD)	
CN801	1-770-228-11	CONNECTOR	
LCD501	1-801-262-11	DISPLAY PANEL, LIQUID CRYSTAL	

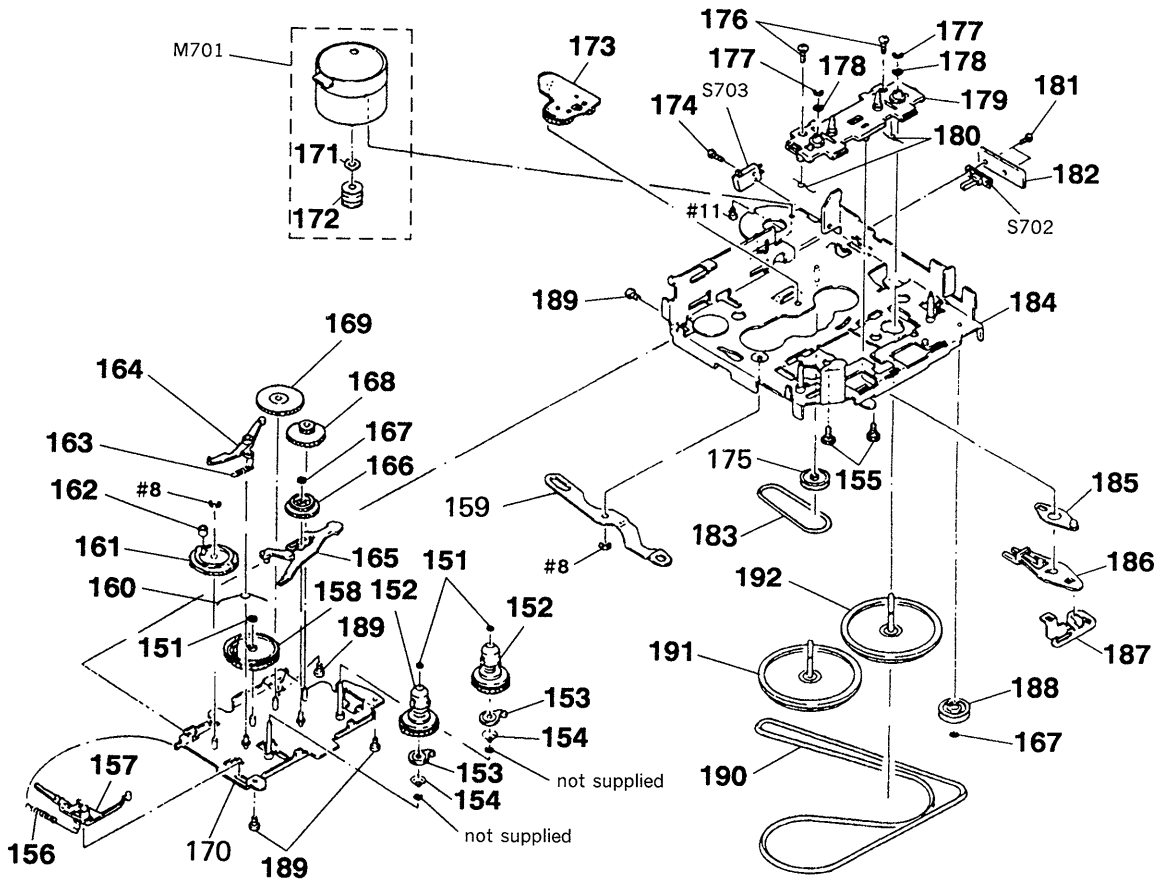
6-3. MECHANISM DECK SECTION 1 (MG-36SHJ-32)



Ref. No.	Part No.	Description	Remark
* 101	3-392-978-01	LEVER, EJECT	
102	3-392-950-01	SPRING	
103	3-392-951-01	SPRING	
* 104	3-392-921-01	LOCK ASSY, EJECT CAM	
105	3-392-972-01	HOOKER, TAPE	
106	3-392-953-01	SPRING	
107	3-392-969-01	LINK, RETURN	
108	3-375-383-01	HANGER (X), CASSETTE	
* 109	3-392-932-01	PLATE, CENTER	
110	3-392-961-01	SPRING (B)	
111	3-570-615-00	POLY-WASHER (DIA. 1.2)	
112	3-392-945-01	ROLLER (A), H.P	
113	3-392-942-01	ROLLER (B), H.P	
114	3-392-970-01	CHASSIS, SWITCH (DIRECTION SWITCH BOARD)	
115	3-392-958-01	SPRING (R)	
116	3-375-378-01	ARM (R) ASSY, PINCH	
* 117	4-908-792-11	SCREW (B2)	
118	3-372-244-01	ARM (N), MUTE	
* 119	3-397-427-01	COLLAR, MUTE ARM	
120	3-377-908-01	SHIM (X), ADJUSTOR	
121	3-375-379-01	SCREW, AZIMUTH	
122	3-375-384-01	HOLDER (X), CASSETTE	
123	3-392-956-01	SPRING (A)	
* 124	3-392-930-01	RETAINER, SPRING	

Ref. No.	Part No.	Description	Remark
125	3-392-943-01	ROLLER, FF	
126	3-676-387-00	POLY-SLIDER (DIA. 1.6)	
127	3-392-955-01	SPRING (A)	
* 128	3-379-142-01	ARM (B), ADJUSTOR	
129	3-392-984-02	GUIDE, TAPE	
130	3-377-909-02	LINK (X), ADJUSTOR	
131	3-392-957-01	SPRING (F)	
132	3-375-377-01	ARM (F) ASSY, PINCH	
133	3-392-948-01	SPRING	
* 134	3-392-980-01	LEVER, FF	
* 135	3-392-981-01	LEVER, REW	
* 136	3-392-935-01	ARM, LOCK	
137	3-392-917-01	SPRING	
* 138	3-372-242-01	BRACKET ASSY (D), LEVER	
* 139	3-392-933-01	LEVER (B), CHANGE	
140	3-392-994-01	ROLLER, PROGRAM	
141	3-392-954-01	SPRING	
142	3-372-243-01	LINK (B), SELECTOR	
143	3-392-952-01	SPRING	
144	3-392-962-01	SPRING	
* 145	3-392-919-01	ARM ASSY, F, R SELECTION	
* 146	3-392-975-05	PLATE ASSY (S), HEAD	
HP701	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)	
S701	1-692-502-11	SWITCH, SLIDE (DIRECTION)	

6-4. MECHANISM DECK SECTION 2 (MG-36SHJ-32)



Ref. No.	Part No.	Description	Remark
151	3-676-387-00	POLY-SLIDER (DIA. 1.6)	
152	3-376-196-01	SPINDLE ASSY (S), REEL	
153	3-375-380-01	CAM ASSY, DETECTION	
154	3-370-619-01	SPRING, BACK TENSION	
155	3-392-918-01	SCREW, EJECT HOOK	
156	3-392-959-01	SPRING	
157	3-392-985-02	RATCHET	
158	3-392-990-01	GEAR, DETECTION	
* 159	3-392-979-01	LEVER, REVERSE	
160	3-392-960-01	SPRING	
161	3-392-987-01	GEAR, SELECTOR	
162	3-392-944-01	COLLAR (SELECTOR GEAR)	
163	3-375-131-01	SPRING, GEAR LOCK ARM	
164	3-392-989-02	ARM, GEAR LOCK	
165	3-392-986-01	ARM, SENSOR	
166	3-392-915-01	GEAR, IDLE	
167	3-570-615-00	POLY-WASHER (DIA. 1.2)	
168	3-392-936-01	GEAR (A)	
169	3-392-937-01	GEAR (B)	
* 170	3-392-976-01	BASE ASSY, REEL	
* 171	3-392-912-01	WASHER, MYLAR	
* 172	3-392-913-01	PULLEY, MOTOR	
173	3-392-916-01	ARM ASSY, TU GEAR	

Ref. No.	Part No.	Description	Remark
174	3-318-203-11	SCREW (B1.7X6), TAPPING	
175	3-392-938-01	GEAR, PULLY	
176	3-318-204-81	SCREW (M1.7X3), TAPPING	
177	3-590-768-00	RING (A), E	
178	3-701-437-11	POLY-SLIDER (A)	
* 179	3-375-381-01	BRACKET ASSY (X), CM	
180	3-392-963-01	SPRING (R)	
181	3-318-204-91	SCREW (M1.7X4), TAPPING	
182	3-375-376-01	MUTE (PWB) (MUTE SWITCH BOARD)	
183	3-375-375-02	BELT (C), SUB	
* 184	3-392-974-01	CHASSIS ASSY, MAIN	
* 185	3-392-925-01	ARM (A) ASSY, F.R	
* 186	3-392-939-01	ARM, FF	
* 187	3-392-934-01	ARM (B), F.R	
188	3-392-941-01	PULLEY (A), IDLE	
* 189	4-908-792-11	SCREW (B2)	
190	3-392-967-01	BELT, MAIN	
191	3-392-995-02	FLYWHEEL ASSY (BR)	
192	3-392-926-02	FLYWHEEL ASSY (BF)	
M701	X-3365-046-1	MOTOR ASSY (REEL/CAPSTAN)	
S702	1-692-065-11	SWITCH, LEAF (MUTE)	
S703	1-554-790-21	SWITCH, POWER (TAPE DET)	

SECTION 7
ELECTRICAL PARTS LIST

LAMP **MAIN**

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description			Remark
*	1-661-157-11	LAMP BOARD			
		**********			
		< PILOT LAMP >			
PL701	1-517-566-11	LAMP, PILOT (1950(AMBER)/1953)			
PL701	1-517-567-11	LAMP, PILOT (1950(GREEN))			
PL702	1-517-566-11	LAMP, PILOT (1950(AMBER)/1953)			
PL702	1-517-567-11	LAMP, PILOT (1950(GREEN))			
**********					
*	A-3309-288-A	MAIN BOARD, COMPLETE (1953)			
*	A-3309-290-A	MAIN BOARD, COMPLETE (1950(GREEN))			
*	A-3309-295-A	MAIN BOARD, COMPLETE (1950(AMBER))			
		**********			
	7-621-770-67	SCREW +PTT 2.6X6 (S)			
		< JACK >			
ANT1	1-764-808-14	JACK (ANTENNA)			
		< LITHIUM BATTERY >			
BAT401	1-528-225-31	BATTERY, LITHIUM (CR2032) 3V			
		< CAPACITOR >			
C1	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C2	1-126-933-11	ELECT	100uF	20%	16V
C3	1-126-933-11	ELECT	100uF	20%	16V
C4	1-126-933-11	ELECT	100uF	20%	16V
C5	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C6	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C7	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C8	1-163-989-11	CERAMIC CHIP	0.033uF	10%	50V
C9	1-126-288-11	ELECT	4.7uF	20%	16V (1953)
C10	1-126-288-11	ELECT	4.7uF	20%	16V (1953)
C11	1-126-923-11	ELECT	220uF	20%	10V (1953)
C12	1-124-229-00	ELECT	33uF	20%	10V
C13	1-124-257-00	ELECT	2.2uF	20%	50V (1950)
C13	1-126-301-11	ELECT	1uF	20%	50V (1953)
C14	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C15	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C16	1-126-933-11	ELECT	100uF	20%	16V
C17	1-136-157-00	FILM	0.022uF	5%	50V
C18	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C20	1-126-157-11	ELECT	10uF	20%	16V
C21	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C22	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C23	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C24	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C25	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C26	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C27	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C41	1-164-232-11	CERAMIC CHIP	0.01uF	10%	100V
C101	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C102	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C103	1-124-229-00	ELECT	33uF	20%	10V
C104	1-126-157-11	ELECT	10uF	20%	16V
C105	1-126-288-11	ELECT	4.7uF	20%	16V
C106	1-126-157-11	ELECT	10uF	20%	16V
C107	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C108	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C109	1-126-157-11	ELECT	10uF	20%	16V
C110	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C111	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C112	1-126-157-11	ELECT	10uF	20%	16V
C113	1-126-301-11	ELECT	1uF	20%	50V
C114	1-126-301-11	ELECT	1uF	20%	50V
C115	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C116	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C201	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C202	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C203	1-124-229-00	ELECT	33uF	20%	10V
C204	1-126-157-11	ELECT	10uF	20%	16V
C205	1-126-288-11	ELECT	4.7uF	20%	16V
C206	1-126-157-11	ELECT	10uF	20%	16V
C207	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C208	1-164-157-11	CERAMIC CHIP	0.068uF	10%	25V

MAIN

Ref.No.	Part No.	Description				Remark
C209	1-126-157-11	ELECT	10uF	20%	16V	
C210	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C211	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C212	1-126-157-11	ELECT	10uF	20%	16V	
C213	1-126-301-11	ELECT	1uF	20%	50V	
C214	1-126-301-11	ELECT	1uF	20%	50V	
C215	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C216	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C301	1-124-589-11	ELECT	47uF	20%	16V	
C304	1-126-157-11	ELECT	10uF	20%	16V	
C305	1-126-157-11	ELECT	10uF	20%	16V	
C306	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C307	1-126-157-11	ELECT	10uF	20%	16V	
C308	1-124-234-00	ELECT	22uF	20%	16V	
C309	1-126-157-11	ELECT	10uF	20%	16V	
C310	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C312	1-126-288-11	ELECT	4.7uF	20%	16V	
C313	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	
C314	1-124-234-00	ELECT	22uF	20%	16V	
C315	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C316	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C317	1-126-162-11	ELECT	3.3uF	20%	50V	
C401	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C402	1-124-589-11	ELECT	47uF	20%	16V	
C403	1-124-589-11	ELECT	47uF	20%	16V	
C404	1-126-936-11	ELECT	3300uF	20%	16V	
C405	1-126-942-61	ELECT	1000uF	20%	25V	
C406	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C407	1-126-288-11	ELECT	4.7uF	20%	16V	
C408	1-126-923-11	ELECT	220uF	20%	10V	
C409	1-126-157-11	ELECT	10uF	20%	16V	
C410	1-136-165-00	FILM	0.1uF	5%	50V	
C411	1-126-157-11	ELECT	10uF	20%	16V	
C501	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C502	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C503	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C504	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C506	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C507	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C508	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C509	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C510	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C511	1-136-165-00	FILM	0.1uF	5%	50V	
CX3	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
CX5	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	(1950)
CX5	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	(1953)

Ref.No.	Part No.	Description	Remark
		< CONNECTOR >	
CN4	1-770-051-11	CONNECTOR 7P	
CN101	1-770-083-11	CONNECTOR 3P	
CN802	1-778-189-11	PIN, CONNECTOR (PC BOARD) 14P	
		< DIODE >	
D1	8-719-421-09	DIODE MA723	
D2	8-719-421-09	DIODE MA723	
D3	8-719-991-33	DIODE 1SS133T-77 (1953)	
D4	8-719-991-33	DIODE 1SS133T-77 (1953)	
D5	8-719-923-92	DIODE MTZJ-T-77-16B (1953)	
D6	8-719-991-33	DIODE 1SS133T-77 (1953)	
D7	8-719-991-33	DIODE 1SS133T-77	
D301	8-719-200-82	DIODE 11ES2	
D302	8-719-991-33	DIODE 1SS133T-77	
D303	8-719-991-33	DIODE 1SS133T-77	
D401	8-719-921-74	DIODE MTZN-10A	
D402	8-719-989-62	DIODE RL254	
D403	8-719-991-33	DIODE 1SS133T-77	
D404	8-719-109-93	DIODE RD6.2ESB2	
D405	8-719-991-33	DIODE 1SS133T-77	
D406	8-719-991-33	DIODE 1SS133T-77	
D407	8-719-991-33	DIODE 1SS133T-77	
D408	8-719-921-63	DIODE MTZJ-7.5B	
D409	8-719-991-33	DIODE 1SS133T-77	
D410	8-719-110-03	DIODE RD7.5ESB2	
D411	8-719-989-62	DIODE RL254	
D415	8-719-991-33	DIODE 1SS133T-77	
		< IC >	
IC1	8-759-945-44	IC BA6161F (1953)	
IC2	8-759-100-96	IC uPC4558G2	
IC102	8-759-368-11	IC LC75372E	
IC103	8-759-100-96	IC uPC4558G2	
IC104	8-759-369-42	IC HA13153	
IC501	8-759-428-79	IC uPD17017GF-B20-3B9	
		< JUMPER RESISTOR >	
JR201	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR202	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR203	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR204	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR205	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR206	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR207	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR208	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR209	1-216-295-00	CONDUCTOR, CHIP	(2012)
JR210	1-216-295-00	CONDUCTOR, CHIP	(2012)

Ref. No.	Part No.	Description		Remark
JR301	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR302	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR303	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR304	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR305	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR306	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR307	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR308	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR309	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR310	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR311	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR312	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR313	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR314	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR315	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR316	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR317	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR318	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR319	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR320	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR321	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR322	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR323	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR324	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR999	1-216-295-00	CONDUCTOR, CHIP	(2012)	
		< COIL >		
L1	1-410-324-11	INDUCTOR	4.7uH	
L2	1-412-448-11	INDUCTOR	4.7mH (1953)	
L52	1-410-973-11	INDUCTOR	22uH	
L401	1-411-669-12	COIL, CHOKE		
		< LIQUID CRYSTAL DISPLAY >		
LCD501	1-801-262-11	DISPLAY PANEL, LIQUID CRYSTAL		
		< TRANSISTOR >		
Q1	8-729-107-45	TRANSISTOR	2SC3624A-L16 (1953)	
Q1	8-729-120-28	TRANSISTOR	2SC1623-L5L6 (1950)	
Q2	8-729-107-45	TRANSISTOR	2SC3624A-L16 (1953)	
Q2	8-729-120-28	TRANSISTOR	2SC1623-L5L6 (1950)	
Q101	8-729-920-21	TRANSISTOR	DTC314TKH04	
Q102	8-729-920-21	TRANSISTOR	DTC314TKH04	
Q201	8-729-922-21	TRANSISTOR	DTC314TKH04	
Q202	8-729-922-21	TRANSISTOR	DTC314TKH04	
Q302	8-729-216-22	TRANSISTOR	2SA1162-G	
Q303	8-729-216-22	TRANSISTOR	2SA1162-G	
Q304	8-729-901-04	TRANSISTOR	DTA114EK	
Q401	8-729-205-95	TRANSISTOR	2SA1428-Y	
Q402	8-729-900-53	TRANSISTOR	DTC114EK	
Q403	8-729-205-95	TRANSISTOR	2SA1428-Y	
Q404	8-729-900-53	TRANSISTOR	DTC114EK	
Q405	8-729-205-95	TRANSISTOR	2SA1428-Y	
Q406	8-729-900-53	TRANSISTOR	DTC114EK	
Q407	1-807-307-31	TRANSISTOR	2SC3420-BL	
Q408	8-729-901-04	TRANSISTOR	DTA114EK	
Q409	8-729-900-53	TRANSISTOR	DTC114EK	
Q410	8-729-925-19	TRANSISTOR	2SD1225M-Q	
Q411	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q412	8-729-904-51	TRANSISTOR	DTB123EK	
Q413	8-729-904-51	TRANSISTOR	DTB123EK	
Q414	8-729-901-04	TRANSISTOR	DTA114EK	
Q415	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q417	8-729-901-04	TRANSISTOR	DTA114EK	
Q418	8-729-901-04	TRANSISTOR	DTA114EK	
Q419	8-729-205-95	TRANSISTOR	2SA1428-Y	
Q501	8-729-901-01	TRANSISTOR	DTC144EK	
Q502	8-729-900-53	TRANSISTOR	DTC114EK (1953)	
Q503	8-729-901-01	TRANSISTOR	DTC144EK	
		< RESISTOR >		
R1	1-216-073-00	METAL CHIP	10K 5% 1/10W	
R3	1-249-393-11	CARBON	10 5% 1/4W	
R4	1-249-393-11	CARBON	10 5% 1/4W	
R5	1-216-061-00	METAL CHIP	3.3K 5% 1/10W	
R6	1-216-089-00	METAL GLAZE	47K 5% 1/10W	
R7	1-216-057-00	METAL CHIP	2.2K 5% 1/10W	
R8	1-216-077-00	METAL CHIP	15K 5% 1/10W (1953)	
R9	1-216-045-00	METAL CHIP	680 5% 1/10W (1953)	
R10	1-216-041-00	METAL CHIP	470 5% 1/10W	
R11	1-216-021-00	METAL CHIP	68 5% 1/10W (1953)	
R14	1-216-073-00	METAL CHIP	10K 5% 1/10W	
R18	1-216-089-00	METAL GLAZE	47K 5% 1/10W (1953)	
R20	1-216-049-11	METAL GLAZE	1K 5% 1/10W	
R21	1-216-107-00	METAL CHIP	270K 5% 1/10W	
R22	1-216-222-00	METAL GLAZE	10K 5% 1/8W	
R23	1-216-073-00	METAL CHIP	10K 5% 1/10W	
R24	1-216-075-00	METAL CHIP	12K 5% 1/10W	
R25	1-216-053-00	METAL CHIP	1.5K 5% 1/10W	
R101	1-216-089-00	METAL GLAZE	47K 5% 1/10W	
R102	1-216-081-00	METAL CHIP	22K 5% 1/10W	
R103	1-216-107-00	METAL CHIP	270K 5% 1/10W	
R104	1-216-031-00	METAL CHIP	180 5% 1/10W	
R105	1-216-077-00	METAL CHIP	15K 5% 1/10W	
R106	1-216-689-11	METAL CHIP	39K 0.5% 1/10W	
R107	1-216-073-00	METAL CHIP	10K 5% 1/10W	
R108	1-216-077-00	METAL CHIP	15K 5% 1/10W	
R109	1-216-073-00	METAL CHIP	10K 5% 1/10W	
R110	1-216-073-00	METAL CHIP	10K 5% 1/10W	

MAIN

Ref. No.	Part No.	Description			Remark
R111	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R112	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W
R115	1-216-081-00	METAL CHIP	22K	5%	1/10W
R116	1-216-081-00	METAL CHIP	22K	5%	1/10W
R201	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R202	1-216-081-00	METAL CHIP	22K	5%	1/10W
R203	1-216-107-00	METAL CHIP	270K	5%	1/10W
R204	1-216-031-00	METAL CHIP	180	5%	1/10W
R205	1-216-077-00	METAL CHIP	15K	5%	1/10W
R206	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R207	1-216-073-00	METAL CHIP	10K	5%	1/10W
R208	1-216-077-00	METAL CHIP	15K	5%	1/10W
R209	1-216-073-00	METAL CHIP	10K	5%	1/10W
R210	1-216-073-00	METAL CHIP	10K	5%	1/10W
R211	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R212	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R213	1-216-073-00	METAL CHIP	10K	5%	1/10W
R214	1-216-073-00	METAL CHIP	10K	5%	1/10W
R215	1-216-081-00	METAL CHIP	22K	5%	1/10W
R216	1-216-081-00	METAL CHIP	22K	5%	1/10W
R301	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R302	1-249-401-11	CARBON	47	5%	1/4W
R307	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R308	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W
R312	1-259-880-11	CARBON	2.2M	5%	1/4W
R313	1-259-880-11	CARBON	2.2M	5%	1/4W
R314	1-259-880-11	CARBON	2.2M	5%	1/4W
R315	1-259-880-11	CARBON	2.2M	5%	1/4W
R316	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R317	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R401	1-216-081-00	METAL CHIP	22K	5%	1/10W
R402	1-249-417-11	CARBON	1K	5%	1/4W
R403	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R404	1-249-417-11	CARBON	1K	5%	1/4W
R405	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R406	1-249-417-11	CARBON	1K	5%	1/4W
R407	1-216-041-00	METAL CHIP	470	5%	1/10W
R408	1-249-401-11	CARBON	47	5%	1/4W
R409	1-216-073-00	METAL CHIP	10K	5%	1/10W
R410	1-216-025-00	METAL GLAZE	100	5%	1/10W
R411	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R412	1-216-081-00	METAL CHIP	22K	5%	1/10W
R413	1-216-113-00	METAL CHIP	470K	5%	1/10W
R414	1-215-861-00	METAL OXIDE	47	5%	1W F
R415	1-249-393-11	CARBON	10	5%	1/4W
R416	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R417	1-216-113-00	METAL CHIP	470K	5%	1/10W
R421	1-249-428-11	CARBON	8.2K	5%	1/4W
R422	1-216-081-00	METAL CHIP	22K	5%	1/10W
R423	1-216-073-00	METAL CHIP	10K	5%	1/10W
R424	1-216-073-00	METAL CHIP	10K	5%	1/10W
R425	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W
R426	1-216-357-00	METAL OXIDE	4.7	5%	1W F
R427	1-216-357-00	METAL OXIDE	4.7	5%	1W F
R428	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R429	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R432	1-216-025-00	METAL GLAZE	100	5%	1/10W
R501	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R502	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R503	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R504	1-216-049-11	METAL GLAZE	1K	5%	1/10W (1953)
R505	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R506	1-216-073-00	METAL CHIP	10K	5%	1/10W
R507	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R508	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R509	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R510	1-216-238-00	METAL GLAZE	47K	5%	1/8W
R511	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R512	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R513	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R514	1-216-073-00	METAL CHIP	10K	5%	1/10W
R515	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R516	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R517	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R518	1-216-113-00	METAL CHIP	470K	5%	1/10W
R519	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R520	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R521	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R522	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R523	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R524	1-216-073-00	METAL CHIP	10K	5%	1/10W
R525	1-216-073-00	METAL CHIP	10K	5%	1/10W
R526	1-216-073-00	METAL CHIP	10K	5%	1/10W
R528	1-216-073-00	METAL CHIP	10K	5%	1/10W
R532	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R534	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R537	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R538	1-216-049-11	METAL GLAZE	1K	5%	1/10W (1953)
R539	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (1950)
R539	1-216-101-00	METAL CHIP	150K	5%	1/10W (1953)
R540	1-216-101-00	METAL CHIP	150K	5%	1/10W

< DISCHARGE GAP >

SUP1	1-519-504-11	GAP, DISCHARGE

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
SW501	1-571-478-11	SWITCH, SLIDE (FREQUENCY SELECT) (1950)	
		< VIBRATOR >	
X501	1-567-713-11	VIBRATOR, CRYSTAL (4.5MHz)	
**********			
*	1-661-159-11	POWER BOARD	
		**********	
		< CONNECTOR >	
CN801	1-770-228-11	CONNECTOR	
		< FUSE >	
F801	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
**********			
*	A-3309-294-A	SWITCH BOARD, COMPLETE (1950(GREEN))	
*	A-3309-297-A	SWITCH BOARD, COMPLETE (1950(AMBER)/1953)	
		**********	
		< PILOT LAMP >	
PL601	1-517-566-11	LAMP, PILOT (1950(AMBER)/1953)	
PL601	1-517-567-11	LAMP, PILOT (1950(GREEN))	
PL602	1-517-566-11	LAMP, PILOT (1950(AMBER)/1953)	
PL602	1-517-567-11	LAMP, PILOT (1950(GREEN))	
PL603	1-517-566-11	LAMP, PILOT (1950(AMBER)/1953)	
PL603	1-517-567-11	LAMP, PILOT (1950(GREEN))	
		< RESISTOR >	
R601	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R602	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R603	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R604	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R605	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R606	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R607	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R608	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R609	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R610	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R611	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R612	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R613	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R614	1-216-295-00	CONDUCTOR, CHIP (2012)	
		< SWITCH >	
SW601	1-572-704-21	SWITCH, KEY BOARD (OFF)	
SW602	1-572-704-21	SWITCH, KEY BOARD (+)	
SW603	1-572-704-21	SWITCH, KEY BOARD (SEL)	
SW604	1-572-704-21	SWITCH, KEY BOARD (-)	
SW605	1-572-704-21	SWITCH, KEY BOARD (TUNER)	
SW606	1-572-704-21	SWITCH, KEY BOARD (SENS)	
SW607	1-572-704-21	SWITCH, KEY BOARD (+ (SEEK/MANU))	
SW608	1-572-704-21	SWITCH, KEY BOARD (- (SEEK/MANU))	
SW609	1-572-704-21	SWITCH, KEY BOARD (2)	
SW610	1-572-704-21	SWITCH, KEY BOARD (1)	
SW611	1-572-704-21	SWITCH, KEY BOARD (A.MEM/M.SCAN)	
SW612	1-572-704-21	SWITCH, KEY BOARD (LOUD)	
SW613	1-572-704-21	SWITCH, KEY BOARD (6)	
SW614	1-572-704-21	SWITCH, KEY BOARD (5)	
SW615	1-572-704-21	SWITCH, KEY BOARD (4)	
SW616	1-572-704-21	SWITCH, KEY BOARD (3)	
**********			
*	1-661-158-11	TUNER BOARD	
		**********	
		< CAPACITOR >	
C51	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C52	1-126-947-11	ELECT 47uF 20% 35V	
C53	1-163-010-11	CERAMIC CHIP 0.0012uF 10% 50V	
C54	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C55	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C56	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C57	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C58	1-163-231-11	CERAMIC CHIP 15PF 5% 50V	
C59	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C60	1-128-054-11	ELECT 22uF 20% 10V	
C61	1-126-301-11	ELECT 1uF 20% 50V	
C62	1-163-022-00	CERAMIC CHIP 0.012uF 10% 50V (1950)	
C62	1-163-075-00	CERAMIC CHIP 0.047uF 50V (1953)	
C63	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C64	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C65	1-163-075-00	CERAMIC CHIP 0.047uF 50V	
C66	1-126-162-11	ELECT 3.3uF 20% 50V	
C67	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C68	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C69	1-126-157-11	ELECT 10uF 20% 16V	
C70	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C71	1-126-933-11	ELECT 100uF 20% 16V	
C72	1-126-162-11	ELECT 3.3uF 20% 50V	
C73	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C74	1-163-222-11	CERAMIC CHIP 5PF 0.25PF 50V	
C75	1-163-257-11	CERAMIC CHIP 180PF 5% 50V (1953)	

TUNER

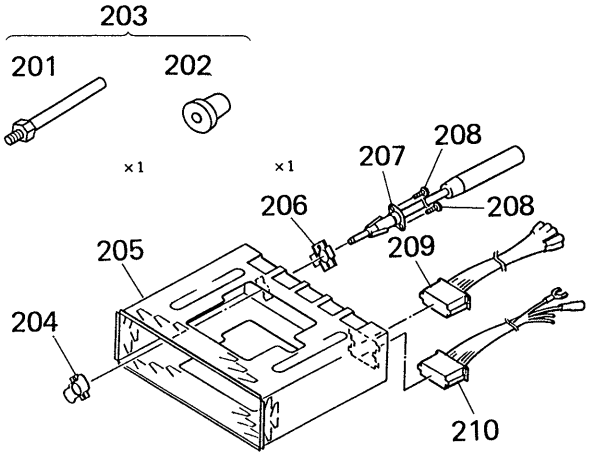
Ref. No.	Part No.	Description			Remark
C76	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C77	1-163-809-11	CERAMIC CHIP	0.047uF	10% 25V	
					(1953)
C78	1-163-809-11	CERAMIC CHIP	0.047uF	10% 25V	
C79	1-126-159-11	ELECT	0.47uF	20% 50V	
C80	1-163-809-11	CERAMIC CHIP	0.047uF	10% 25V	
C81	1-164-182-11	CERAMIC CHIP	0.0033uF	10% 50V	
C82	1-126-301-11	ELECT	1uF	20% 50V	
C83	1-163-037-11	CERAMIC CHIP	0.022uF	10% 25V	
C84	1-126-301-11	ELECT	1uF	20% 50V	
C85	1-163-809-11	CERAMIC CHIP	0.047uF	10% 25V	
C86	1-163-007-11	CERAMIC CHIP	680PF	10% 50V	
C87	1-124-463-00	ELECT	0.1uF	20% 50V	
C88	1-163-011-11	CERAMIC CHIP	0.0015uF	10% 50V	
C90	1-163-222-11	CERAMIC CHIP	5PF	0.25PF 50V	
C91	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
					(1953)
C92	1-163-037-11	CERAMIC CHIP	0.022uF	10% 25V	
C93	1-163-113-00	CERAMIC CHIP	68PF	5% 50V	
					(1953)
C93	1-216-295-00	CONDUCTOR, CHIP		(2012)	(1950)
C94	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
		< FILTER >			
CF51	1-567-309-11	FILTER, CERAMIC			
CF52	1-579-185-21	FILTER, CERAMIC			
		< CONNECTOR >			
CN51	1-778-187-11	PIN, CONNECTOR 8P			
CN52	1-778-188-11	PIN, CONNECTOR 16P			
		< TRIMMER >			
CT51	1-141-346-11	CAP, VAR, TRIMMER 10PF			
CT52	1-141-346-11	CAP, VAR, TRIMMER 10PF			
CT53	1-141-346-11	CAP, VAR, TRIMMER 10PF			
		< DIODE >			
D51	1-216-295-00	CONDUCTOR, CHIP		(2012)	(1950)
D51	8-719-404-49	DIODE	MA111	(1953)	
D52	8-719-049-16	DIODE	1SV234		
D53	8-719-053-81	DIODE	SVC354S		
D54	8-719-981-97	DIODE	MTZJ-3.0A		
D55	8-719-991-33	DIODE	1SS133T-77		
D56	8-719-991-33	DIODE	1SS133T-77	(1953)	
		< TUNER >			
TU51	1-465-919-11	TUNER UNIT (FM)	(1950)		
TU51	1-693-193-11	TUNER UNIT (FM)	(1953)		

Ref. No.	Part No.	Description			Remark
		< IC >			
IC51	8-759-265-93	IC	LA1875M-TE-L		
		< JUMPER RESISTOR >			
JR21	1-216-295-00	CONDUCTOR, CHIP		(2012)	
JR22	1-216-295-00	CONDUCTOR, CHIP		(2012)	
JR23	1-216-295-00	CONDUCTOR, CHIP		(2012)	
JR24	1-216-295-00	CONDUCTOR, CHIP		(2012)	
JR25	1-216-295-00	CONDUCTOR, CHIP		(2012)	
JR26	1-216-295-00	CONDUCTOR, CHIP		(2012)	
JR27	1-216-295-00	CONDUCTOR, CHIP		(2012)	(1950)
JR28	1-216-295-00	CONDUCTOR, CHIP		(2012)	(1950)
JR31	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR32	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR33	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR34	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR35	1-216-296-00	CONDUCTOR, CHIP		(3216)	
		< COIL >			
L51	1-410-973-11	INDUCTOR	22uH		
L53	1-411-853-11	COIL (LW OSC)	(1953)		
L54	1-411-852-11	COIL (MW OSC)			
L55	1-410-324-11	INDUCTOR	4.7uH		
		< TRANSISTOR >			
Q51	8-729-902-99	TRANSISTOR	DTC114TK		
Q52	8-729-931-02	TRANSISTOR	2SC2413KQ		
Q53	8-729-902-99	TRANSISTOR	DTC114TK		
Q54	8-729-012-35	TRANSISTOR	2SK711-BL		
Q55	8-729-931-02	TRANSISTOR	2SC2413KQ		
Q56	8-729-032-50	TRANSISTOR	2SC4018K-N	(1953)	
Q57	8-729-032-50	TRANSISTOR	2SC4018K-N	(1953)	
Q58	8-729-012-35	TRANSISTOR	2SK711-BL		
Q59	8-729-900-53	TRANSISTOR	DTC114EK	(1953)	
Q60	8-729-900-53	TRANSISTOR	DTC114EK	(1953)	
Q61	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q62	8-729-900-53	TRANSISTOR	DTC114EK		
Q63	8-729-920-74	TRANSISTOR	2SC2412K-QR		
Q64	8-729-216-22	TRANSISTOR	2SA1162-G	(1953)	
		< RESISTOR >			
R43	1-216-081-00	METAL CHIP	22K	5% 1/10W	(1953)
R43	1-216-295-00	CONDUCTOR, CHIP		(2012)	
R51	1-216-049-11	METAL GLAZE	1K	5% 1/10W	
R52	1-216-009-00	METAL CHIP	22	5% 1/10W	
R53	1-216-079-00	METAL GLAZE	18K	5% 1/10W	
R54	1-216-073-00	METAL CHIP	10K	5% 1/10W	
R55	1-216-039-00	METAL CHIP	390	5% 1/10W	

Ref. No.	Part No.	Description			Remark
R56	1-216-073-00	METAL CHIP	10K	5%	1/10W
R57	1-216-041-00	METAL CHIP	470	5%	1/10W
R58	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R59	1-216-039-00	METAL CHIP	390	5%	1/10W
R60	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R61	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (1953)
R62	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (1953)
R63	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R64	1-216-073-00	METAL CHIP	10K	5%	1/10W
R65	1-216-081-00	METAL CHIP	22K	5%	1/10W
R66	1-216-075-00	METAL CHIP	12K	5%	1/10W
R67	1-216-073-00	METAL CHIP	10K	5%	1/10W
R68	1-216-025-00	METAL GLAZE	100	5%	1/10W
R69	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R70	1-216-097-00	METAL GLAZE	100K	5%	1/10W (1953)
R70	1-216-295-00	CONDUCTOR, CHIP			(2012) (1950)
R71	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R72	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R73	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R74	1-216-101-00	METAL CHIP	150K	5%	1/10W (1953)
R75	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R76	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R77	1-216-041-00	METAL CHIP	470	5%	1/10W
R78	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R79	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R80	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R81	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R82	1-216-105-00	METAL CHIP	220K	5%	1/10W
R83	1-216-097-00	METAL GLAZE	100K	5%	1/10W (1953)
R84	1-216-089-00	METAL GLAZE	47K	5%	1/10W (1953)
R86	1-216-075-00	METAL CHIP	12K	5%	1/10W
R87	1-216-089-00	METAL GLAZE	47K	5%	1/10W (1953)
R89	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
		< VARIABLE RESISTOR >			
RV51	1-230-497-11	RES, ADJ, CARBON 22K			
RV52	1-230-495-11	RES, ADJ, CARBON 2.2K			
RV53	1-230-945-11	RES, ADJ, CARBON 470K			
		< COIL >			
T51	1-411-849-11	COIL (MW RF)			
T52	1-411-850-11	COIL (LW RF) (1953)			
T53	1-411-848-11	COIL (MW RF) (1953)			
T53	1-411-849-11	COIL (MW RF) (1950)			
T54	1-411-850-11	COIL (LW RF) (1953)			
T55	1-411-854-11	COIL (AM IFT)			
T56	1-411-847-11	COIL (FM DET)			

Ref. No.	Part No.	Description	Remark
		< VIBRATOR >	
X51	1-579-278-11	VIBRATOR, CERAMIC (456kHz)	
		MISCELLANEOUS	
69	1-769-261-11	CORD (WITH CONNECTOR) 3P	
73	1-769-262-11	CORD (WITH CONNECTOR) 7P	
F801	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
HP701	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)	
M701	X-3365-046-1	MOTOR ASSY (REEL/CAPSTAN)	
S701	1-692-502-11	SWITCH, SLIDE (DIRECTION)	
S702	1-692-065-11	SWITCH, LEAF (MUTE)	
S703	1-554-790-21	SWITCH, POWER (TAPE DET)	
		ACCESSORIES & PACKING MATERIALS	
	3-856-689-21	MANUAL, INSTRUCTION (ENGLISH, SPANISH, CHINESE)	(1950)
	3-856-689-31	MANUAL, INSTRUCTION (ENGLISH, POLISH, HUNGARIAN, BULGARIAN, RUSSIAN)	(1953)
	3-856-690-21	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH, CHINESE)	(1950)
	3-856-690-31	MANUAL, INSTRUCTION, INSTALL (ENGLISH, POLISH, HUNGARIAN, BULGARIAN, RUSSIAN)	(1953)
		HARDWARE LIST	
#1	7-621-775-10	SCREW +B 2.6X4	
#2	7-621-770-67	SCREW +PTT 2.6X6 (S)	
#3	7-621-770-XX	SCREW +PTT 2.6X8 (S)	
#4	7-621-555-10	SCREW +K 2X3	
#5	7-621-255-25	SCREW +PTT 2X4 (S)	
#6	7-627-553-88	SCREW, PRECISION +P 2X7	
#7	7-624-102-04	STOP RING 1.5, TYPE -E	
#8	7-624-104-04	STOP RING 2.0, TYPE -E	
#9	7-624-118-01	RING, RETAINING E-2.5	
#10	7-627-553-48	SCREW, PRECISION +P 2X4	
#11	7-621-255-15	SCREW +P 2X3	
#12	7-621-591-00	SCREW +K 2X4	
#13	7-621-773-86	SCREW +B 2.6X4	

Ref. No.	Part No.	Description	Remark
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
201	3-386-828-01	SCREW, FITTING	
202	3-349-410-01	BUSHING	
203	X-3366-405-1	SCREW ASSY (EXP), FITTING	
204	3-935-573-01	BRACKET (ANT)	
205	X-3372-128-1	BRACKET ASSY	
206	3-935-602-01	PLATE (ANT), GROUND	
207	1-769-453-11	CORD (WITH CONNECTOR) (ANT)	
208	7-621-770-67	SCREW +B 2.6X6	
209	1-769-452-11	CORD (WITH CONNECTOR) (SP)	
210	1-777-093-11	CORD (WITH CONNECTOR)	



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